



STIC Search Report

Biotech-Chem Library

STIC Database Tracking Number: 163653

TO: Nita M Minnifield
Location: 3c01 / 3c18
Wednesday, August 31, 2005
Art Unit: 1645
Phone: 571-272-0860
Serial Number: 10 / 680349

From: Jan Delaval
Location: Biotech-Chem Library
Remsen 1a51
Phone: 571-272-2504

jan.delaval@uspto.gov

Search Notes

*Reviewed
2/06
mm*

This Page Blank (uspto)

STIC-Biotech/ChemLib

163653

From: Minnifield, Nita
Sent: Wednesday, August 24, 2005 12:48 PM
To: STIC-Biotech/ChemLib
Subject: interference sequence search request

10/680349

STIC

Please do an interference sequence search on SEQ ID NO: 41, 42
and aa 61-86 of SEQ ID NO: 42 of this application.

Please provide a paper copy of all results.

Thanks,
Minnifield,
71976
Art Unit 1645
Office REM-3C01
Mailbox REM-3C18
571-272-0860

STAFF USE ONLY

Searcher: C. Jan
Searcher Phone: 2- 2504
Date Searcher Picked up: 8/24/05
Date Completed: 8/31/05
Searcher Prep/Rev. Time: 10
Online Time: 20

Type of Search

NA#: ✓ AA#: ✓
Interference: ✓ SPDI: ✓
S/L: Oligomer:
Encode/Transl:
Structure#: Text:
Inventor: Litigation:

Vendors and cost where applicable

STN:
DIALOG:
QUESTEL/ORBIT:
LEXIS/NEXIS:
SEQUENCE SYSTEM: ✓
WWW/Internet:
Other(Specify):

This Page Blank (uspto)

```

Query Match      100.0%; Score 840; DB 10; Length 840;
Best Local Similarity 100.0%; Pred. No. 8e-172;
Matches 840; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 ATGAATTATTAAGAAATCTTAGTAAGAGCGCGTTAATCTCATTTAATGTCAATCTTACCA 60
|||||

```

```
Db 1 ATGAATTATAAGAAAAATCTTAGTAAGAAGCGGTTAATCTCATTTAATGTCAATCTTACCA 60
Qy 61 TATCAGTCTTTTGAGATCTCTGAGTTCAGAACTAATGATTAACAAGAAGCGTCTTCTAC 120
Db 61 TATCAGTCTTTTGAGATCTCTGAGTTCAGAACTAATGATTAACAAGAAGCGTCTTCTAC 120
Qy 121 ATTAGTCAAAAGTACAATCCAAGTATATACACCTTTTAGAAAAATTTCTCTGCTGAAGAACT 180
Db 121 ATTAGTCAAAAGTACAATCCAAGTATATACACCTTTTAGAAAAATTTCTCTGCTGAAGAACT 180
Qy 181 CCTATTAAATGGAACAAATTTCTCACATAAAGTTTTTCGAGCTAAAGAAAGATGGTGAT 240
Db 181 CCTATTAAATGGAACAAATTTCTCACATAAAGTTTTTCGAGCTAAAGAAAGATGGTGAT 240
Qy 241 ATACAAAAAAGACGATTTTACAGAGTAGCTCCAGGCATTTGATTTTCAAAATAACTTA 300
Db 241 ATACAAAAAAGACGATTTTACAGAGTAGCTCCAGGCATTTGATTTTCAAAATAACTTA 300
Qy 301 ATATCAGGATTTTCAGGAAGTATTTGTTACTCTATGACGACCAAGAAATAGAACTTGAA 360
Db 301 ATATCAGGATTTTCAGGAAGTATTTGTTACTCTATGACGACCAAGAAATAGAACTTGAA 360
Qy 361 GCTGCATATCAACAATTTAATCCAAAAACACCGATTAACATGATCTGATAATGGTGAA 420
Db 361 GCTGCATATCAACAATTTAATCCAAAAACACCGATTAACATGATCTGATAATGGTGAA 420
Qy 421 TACTATAAACAATTTTGCAATTTCTGATGATGTTAATCTCTGCTATGACATTACA 480
Db 421 TACTATAAACAATTTTGCAATTTCTGATGATGTTAATCTCTGCTATGACATTACA 480
Qy 481 CTTAAAAATGACGCGATTAATCTGATGATGTTAATCTCTGCTATGACATTACA 540
Db 481 CTTAAAAATGACGCGATTAATCTGATGATGTTAATCTCTGCTATGACATTACA 540
Qy 541 GCTGAAGGAGTATCTTTGATGATGATGATGATGATGATGATGATGATGATGATGATGAT 600
Db 541 GCTGAAGGAGTATCTTTGATGATGATGATGATGATGATGATGATGATGATGATGATGAT 600
Qy 601 ATTTTAAAGACCTCAATCTAAATTTGCTTACCAAGGAAATAGGATAGTATAGTACCCT 660
Db 601 ATTTTAAAGACCTCAATCTAAATTTGCTTACCAAGGAAATAGGATAGTATAGTACCCT 660
Qy 661 ATCACACAGAGTCTCTGCAATTTATTTGGTGGATCTACCATGCGGTAATGGTAATAAAA 720
Db 661 ATCACACAGAGTCTCTGCAATTTATTTGGTGGATCTACCATGCGGTAATGGTAATAAAA 720
Qy 721 TTTGAGAAGATACCTGTAATACTCTCTGATGATGATGATGATGATGATGATGATGATGAT 780
Db 721 TTTGAGAAGATACCTGTAATACTCTCTGATGATGATGATGATGATGATGATGATGATGAT 780
Qy 781 GCTTCAGTAACCTTGACGTTGGATCTTTGGCGGAGAAATTCGAATGAGGTTCCACCTTC 840
Db 781 GCTTCAGTAACCTTGACGTTGGATCTTTGGCGGAGAAATTCGAATGAGGTTCCACCTTC 840
```

RESULT 2

US-10-62-624-41

```
; Sequence 41, Application US/10062624
; Publication No. US20020115840A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-jie
; TITLE OF INVENTION: Homologous 28-Kilodalton Immunodominant Protein
; FILE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP2/D1
; CURRENT APPLICATION NUMBER: US/10/062,624
; CURRENT FILING DATE: 2002-01-31
; PRIOR APPLICATION NUMBER: 09/660,587
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 41
; LENGTH: 840
```

```
; TYPE: DNA
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: nucleic acid sequence of E. canis p28-2
US-10-062-624-41
```

Query Match 100.0%; Score 840; DB 13; Length 840;

Best Local Similarity 100.0%; Pred. No. 8e-172; Mismatches 0; Indels 0; Gaps 0;

Matches 840; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy 1 ATGAATTATAAGAAAAATCTTAGTAAGAAGCGGTTAATCTCATTTAATGTCAATCTTACCA 60
Db 1 ATGAATTATAAGAAAAATCTTAGTAAGAAGCGGTTAATCTCATTTAATGTCAATCTTACCA 60
Qy 61 TATCAGTCTTTTGAGATCTCTGAGTTCAGAACTAATGATTAACAAGAAGCGTCTTCTAC 120
Db 61 TATCAGTCTTTTGAGATCTCTGAGTTCAGAACTAATGATTAACAAGAAGCGTCTTCTAC 120
Qy 121 ATTAGTCAAAAGTACAATCCAAGTATATACACCTTTTAGAAAAATTTCTCTGCTGAAGAACT 180
Db 121 ATTAGTCAAAAGTACAATCCAAGTATATACACCTTTTAGAAAAATTTCTCTGCTGAAGAACT 180
Qy 181 CCTATTAAATGGAACAAATTTCTCACATAAAGTTTTTCGAGCTAAAGAAAGATGGTGAT 240
Db 181 CCTATTAAATGGAACAAATTTCTCACATAAAGTTTTTCGAGCTAAAGAAAGATGGTGAT 240
Qy 241 ATACAAAAAAGACGATTTTACAGAGTAGCTCCAGGCATTTGATTTTCAAAATAACTTA 300
Db 241 ATACAAAAAAGACGATTTTACAGAGTAGCTCCAGGCATTTGATTTTCAAAATAACTTA 300
Qy 301 ATATCAGGATTTTCAGGAAGTATTTGTTACTCTATGACGACCAAGAAATAGAACTTGAA 360
Db 301 ATATCAGGATTTTCAGGAAGTATTTGTTACTCTATGACGACCAAGAAATAGAACTTGAA 360
Qy 361 GCTGCATATCAACAATTTAATCCAAAAACACCGATTAACATGATCTGATAATGGTGAA 420
Db 361 GCTGCATATCAACAATTTAATCCAAAAACACCGATTAACATGATCTGATAATGGTGAA 420
Qy 421 TACTATAAACAATTTTGCAATTTCTGATGATGTTAATCTCTGCTATGACATTACA 480
Db 421 TACTATAAACAATTTTGCAATTTCTGATGATGTTAATCTCTGCTATGACATTACA 480
Qy 481 CTTAAAAATGACGCGATTAATCTGATGATGTTAATCTCTGCTATGACATTACA 540
Db 481 CTTAAAAATGACGCGATTAATCTGATGATGTTAATCTCTGCTATGACATTACA 540
Qy 541 GCTGAAGGAGTATCTTTGATGATGATGATGATGATGATGATGATGATGATGATGATGAT 600
Db 541 GCTGAAGGAGTATCTTTGATGATGATGATGATGATGATGATGATGATGATGATGATGAT 600
Qy 601 ATTTTAAAGACCTCAATCTAAATTTGCTTACCAAGGAAATAGGATAGTATAGTACCCT 660
Db 601 ATTTTAAAGACCTCAATCTAAATTTGCTTACCAAGGAAATAGGATAGTATAGTACCCT 660
Qy 661 ATCACACAGAGTCTCTGCAATTTATTTGGTGGATCTACCATGCGGTAATGGTAATAAAA 720
Db 661 ATCACACAGAGTCTCTGCAATTTATTTGGTGGATCTACCATGCGGTAATGGTAATAAAA 720
Qy 721 TTTGAGAAGATACCTGTAATACTCTCTGATGATGATGATGATGATGATGATGATGATGAT 780
Db 721 TTTGAGAAGATACCTGTAATACTCTCTGATGATGATGATGATGATGATGATGATGATGAT 780
Qy 781 GCTTCAGTAACCTTGACGTTGGATCTTTGGCGGAGAAATTCGAATGAGGTTCCACCTTC 840
Db 781 GCTTCAGTAACCTTGACGTTGGATCTTTGGCGGAGAAATTCGAATGAGGTTCCACCTTC 840
```

RESULT 3

US-10-062-051-41

```
; Sequence 41, Application US/10062051
; Publication No. US20030073095A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
```

APPLICANT: McBride, Jere W.
APPLICANT: Yu, Xue-Jie
TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
FILE REFERENCE: D6152CIP2
CURRENT APPLICATION NUMBER: US/10/062,051
CURRENT FILING DATE: 2002-01-31
PRIOR APPLICATION NUMBER: US/09/660,587
PRIOR FILING DATE: 2000-09-12
PRIOR APPLICATION NUMBER: 09/261,358
PRIOR FILING DATE: 1999-03-03
NUMBER OF SEQ ID NOS: 46
SEQ ID NO 41
LENGTH: 840
TYPE: DNA
ORGANISM: Ehrlichia canis
FEATURE:
OTHER INFORMATION: nucleic acid sequence of E. canis p28-2
US-10-062-051-41

Query Match 100.0%; Score 840; DB 14; Length 840;
Best Local Similarity 100.0%; Pred. No. 8e-172;
Matches 840; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 ATGAATTATAGAAAATCTTAGTAAGAGCGGTTAATCTCAATTAATGTCAATCTTACCA 60
Db 1 ATGAATTATAGAAAATCTTAGTAAGAGCGGTTAATCTCAATTAATGTCAATCTTACCA 60

Qy 61 TATCAGTCTTTTGCAGATCCTGTAGTTCAAGAACTAATGATAACAAGAGGCTTCTAC 120
Db 61 TATCAGTCTTTTGCAGATCCTGTAGTTCAAGAACTAATGATAACAAGAGGCTTCTAC 120

Qy 121 ATTAGTGCAAAGTCAATCCAAAGTATATACACTTTAGAAAATTTCTGCTGAAGAACT 180
Db 121 ATTAGTGCAAAGTCAATCCAAAGTATATACACTTTAGAAAATTTCTGCTGAAGAACT 180

Qy 181 CCTATTATGCAACAAATCTCTCACTAAAAAGTTTTCGACATAAAGAGATGGTGAT 240
Db 181 CCTATTATGCAACAAATCTCTCACTAAAAAGTTTTCGACATAAAGAGATGGTGAT 240

Qy 241 ATACAAAAAAGACGATTTTACAGAGTAGCTCCAGGCAATGATTTTCAAAAATTAACCTTA 300
Db 241 ATACAAAAAAGACGATTTTACAGAGTAGCTCCAGGCAATGATTTTCAAAAATTAACCTTA 300

Qy 301 ATATCAGGATTTTTCAGGAAGTATTTGTTTACTCTATGACGACCAAGATAGAACTTGA 360
Db 301 ATATCAGGATTTTTCAGGAAGTATTTGTTTACTCTATGACGACCAAGATAGAACTTGA 360

Qy 361 GCTGCATATCAACAAATTTAATCCAAAACACCGATGCAATGGAAGATGATGATGATGAT 420
Db 361 GCTGCATATCAACAAATTTAATCCAAAACACCGATGCAATGGAAGATGATGATGATGAT 420

Qy 421 TACTATAAACATTTTGCATTTATCGTAAAGATGCAATGGAAGATGATGATGATGATGAT 480
Db 421 TACTATAAACATTTTGCATTTATCGTAAAGATGCAATGGAAGATGATGATGATGATGAT 480

Qy 481 CTAAAAAATGACCGCATAACTTTTATGTCATGATGTTTATGTCATGATGATGATGATGAT 540
Db 481 CTAAAAAATGACCGCATAACTTTTATGTCATGATGTTTATGTCATGATGATGATGATGAT 540

Db 721 TTTGAGAAGATACCTGTAAATACTCTGTAGTATTAAATGATGCTCTCAAAACCATCT 780
Qy 781 GCTTCAGTAACCTTTGACGTTGGATACCTTTGGCGGAGAAATTTGAAATGAGTTCCACCTTC 840
Db 781 GCTTCAGTAACCTTTGACGTTGGATACCTTTGGCGGAGAAATTTGAAATGAGTTCCACCTTC 840

RESULT 4
US-10-062-920-41
Sequence 41, Application US/10062920
Publication No. US20030096250A1
GENERAL INFORMATION: David H.
APPLICANT: Walker, Jere W.
APPLICANT: McBride, Jere W.
APPLICANT: Yu, Xue-Jie
TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
FILE REFERENCE: D6152CIP2
CURRENT APPLICATION NUMBER: US/10/062,920
CURRENT FILING DATE: 2002-01-31
PRIOR APPLICATION NUMBER: US/09/660,587
PRIOR FILING DATE: 2000-09-12
PRIOR APPLICATION NUMBER: 09/261,358
PRIOR FILING DATE: 1999-03-03
NUMBER OF SEQ ID NOS: 46
SEQ ID NO 41
LENGTH: 840
TYPE: DNA
ORGANISM: Ehrlichia canis
FEATURE:
OTHER INFORMATION: nucleic acid sequence of E. canis p28-2
US-10-062-920-41

Query Match 100.0%; Score 840; DB 14; Length 840;
Best Local Similarity 100.0%; Pred. No. 8e-172;
Matches 840; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 ATGAATTATAGAAAATCTTAGTAAGAGCGGTTAATCTCAATTAATGTCAATCTTACCA 60
Db 1 ATGAATTATAGAAAATCTTAGTAAGAGCGGTTAATCTCAATTAATGTCAATCTTACCA 60

Qy 61 TATCAGTCTTTTGCAGATCCTGTAGTTCAAGAACTAATGATAACAAGAGGCTTCTAC 120
Db 61 TATCAGTCTTTTGCAGATCCTGTAGTTCAAGAACTAATGATAACAAGAGGCTTCTAC 120

Qy 121 ATTAGTGCAAAGTCAATCCAAAGTATATACACTTTAGAAAATTTCTGCTGAAGAACT 180
Db 121 ATTAGTGCAAAGTCAATCCAAAGTATATACACTTTAGAAAATTTCTGCTGAAGAACT 180

Qy 181 CCTATTATGCAACAAATCTCTCACTAAAAAGTTTTCGACATAAAGAGATGGTGAT 240
Db 181 CCTATTATGCAACAAATCTCTCACTAAAAAGTTTTCGACATAAAGAGATGGTGAT 240

Qy 241 ATACAAAAAAGACGATTTTACAGAGTAGCTCCAGGCAATGATTTTCAAAAATTAACCTTA 300
Db 241 ATACAAAAAAGACGATTTTACAGAGTAGCTCCAGGCAATGATTTTCAAAAATTAACCTTA 300

Qy 301 ATATCAGGATTTTTCAGGAAGTATTTGTTTACTCTATGACGACCAAGATAGAACTTGA 360
Db 301 ATATCAGGATTTTTCAGGAAGTATTTGTTTACTCTATGACGACCAAGATAGAACTTGA 360

Qy 361 GCTGCATATCAACAAATTTAATCCAAAACACCGATGCAATGGAAGATGATGATGATGAT 420
Db 361 GCTGCATATCAACAAATTTAATCCAAAACACCGATGCAATGGAAGATGATGATGATGAT 420

Qy 421 TACTATAAACATTTTGCATTTATCGTAAAGATGCAATGGAAGATGATGATGATGATGAT 480
Db 421 TACTATAAACATTTTGCATTTATCGTAAAGATGCAATGGAAGATGATGATGATGATGAT 480

Qy 481 CTAAAAAATGACCGCATAACTTTTATGTCATGATGTTTATGTCATGATGATGATGATGAT 540
Db 481 CTAAAAAATGACCGCATAACTTTTATGTCATGATGTTTATGTCATGATGATGATGATGAT 540

```
Qy 541 GCTGAAGAGTATCTTTTCGTACCATATGCATGTGCAGGTATAGGACAGATCTTATCACT 600
Db 541 GCTGAAGAGTATCTTTTCGTACCATATGCATGTGCAGGTATAGGACAGATCTTATCACT 600
Qy 601 ATTTTAAAGACCTCAATCTAAAATTTGCTTTACCAAGGAAAAATFAGGTATTAGTTACCCCT 660
Db 601 ATTTTAAAGACCTCAATCTAAAATTTGCTTTACCAAGGAAAAATFAGGTATTAGTTACCCCT 660
Qy 661 ATCACACAGAGTCTCTCGAATTTATTTGGTGGATACATCAATGCGGTATTGGTAATAAA 720
Db 661 ATCACACAGAGTCTCTCGAATTTATTTGGTGGATACATCAATGCGGTATTGGTAAATAAA 720
Qy 721 TTTGAGAAGATACCTGTAATAACTCCGTAGTATTAAATGATGCTCTCAACCAACATCT 780
Db 721 TTTGAGAAGATACCTGTAATAACTCCGTAGTATTAAATGATGCTCTCAACCAACATCT 780
Qy 781 GCTTCAGTAACTCTTGACGTTGGATCTTTGGCGGAGAAAAATGGAATGAGGTTCACTTC 840
Db 781 GCTTCAGTAACTCTTGACGTTGGATCTTTGGCGGAGAAAAATGGAATGAGGTTCACTTC 840

RESULT 5
US-10-680-349-41
; Sequence 41, Application US/10680349
; Publication No. US20040198951A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-Kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP2/D1
; CURRENT APPLICATION NUMBER: US/10/680,349
; CURRENT FILING DATE: 2003-10-07
; PRIOR FILING DATE: US/10/062,624
; PRIOR APPLICATION NUMBER: 2002-01-31
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 41
; LENGTH: 840
; TYPE: DNA
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: nucleic acid sequence of E. canis p28-2
US-10-680-349-41

Query Match 100.0%; Score 840; DB 19; Length 840;
Best Local Similarity 100.0%; Pred. No. 8e-172;
Matches 840; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 ATGAATTTATAAGAAAAATTTCTAGTAAGAAGCGGTTAATCTCATTAATGTCAATCTTACCA 60
Db 1 ATGAATTTATAAGAAAAATTTCTAGTAAGAAGCGGTTAATCTCATTAATGTCAATCTTACCA 60

Qy 61 TATCAGTCTTTTGCAGATCTCTGTAGGTTCAAGAACTAATGTAACAAGAGGCTTCTAC 120
Db 61 TATCAGTCTTTTGCAGATCTCTGTAGGTTCAAGAACTAATGTAACAAGAGGCTTCTAC 120

Qy 121 ATTAGTGCAAAGTACAATCCAAAGTATATCACACTTTTAGAAAAATTTCTCTGCTGAAGAACT 180
Db 121 ATTAGTGCNAAAGTACAATCCNAGTATATCACACTTTAGAAAAATTTCTCTGCTGAAGAACT 180

Qy 181 CCTATTATGGAACAAAATCTCTCACTAAAAAGTTTTTCGGACTTAAGAAAGATGGTGAT 240
Db 181 CCTATTATGGAACAAAATCTCTCACTAAAAAGTTTTTCGGACTTAAGAAAGATGGTGAT 240

Qy 241 ATACAAAAAAGACGATTTTACAGAGTAGCTCCAGGCATTTGATTTTCAAAATACTTA 300
Db 241 ATACAAAAAAGACGATTTTACAGAGTAGCTCCAGGCATTTGATTTTCAAAATACTTA 300

Qy 301 ATATCAGGATTTTTCAGGAAGTATTGGTTACTCTATGACGGAACCAAGATAGAACTTGAA 360
```

```
Db 301 ATATCAGGATTTTTCAGGAAGTATTGGTTACTCTATGACGGAACCAAGATAGAACTTGAA 360
Qy 361 GCTGCATATCAACAATTTAATCCAAAAACACCGATAACAATGATATCTGATTAATGGTGA 420
Db 361 GCTGCATATCAACAATTTAATCCAAAAACACCGATAACAATGATATCTGATTAATGGTGA 420
Qy 421 TACTATAAACAATTTTGCATTTATCTCGTAAAGATGCAATGGAAGATCAGCAATATGTAGTA 480
Db 421 TACTATAAACAATTTTGCATTTATCTCGTAAAGATGCAATGGAAGATCAGCAATATGTAGTA 480
Qy 481 CTTTAAAAATGACGGCATAAATCTTTTATGTGATGATGTTAAATCTTGTCTATGACATTACA 540
Db 481 CTTTAAAAATGACGGCATAAATCTTTTATGTGATGATGTTAAATCTTGTCTATGACATTACA 540
Qy 541 GCTGAAGAGTATCTTTTCGTACCATATGCATGTGCAGGTATAGGACAGATCTTATCACT 600
Db 541 GCTGAAGAGTATCTTTTCGTACCATATGCATGTGCAGGTATAGGACAGATCTTATCACT 600
Qy 601 ATTTTAAAGACCTCAATCTAAAATTTGCTTTACCAAGGAAAAATAGGTATTAGTTACCCCT 660
Db 601 ATTTTAAAGACCTCAATCTAAAATTTGCTTTACCAAGGAAAAATAGGTATTAGTTACCCCT 660
Qy 661 ATCACACAGAGTCTCTGCAATTTATTTGGTGGATACATCAATGCGGTATTGGTAATAAA 720
Db 661 ATCACACAGAGTCTCTGCAATTTATTTGGTGGATACATCAATGCGGTATTGGTAATAAA 720
Qy 721 TTTGAGAAGATACCTGTAATAACTCTGTAATAACTCTGTAATAACTCTGTAATAACTCT 780
Db 721 TTTGAGAAGATACCTGTAATAACTCTGTAATAACTCTGTAATAACTCTGTAATAACTCT 780
Qy 781 GCTTCAGTAACTCTTGACGTTGGATCTTTGGCGGAGAAAAATGGAATGAGGTTCACTTC 840
Db 781 GCTTCAGTAACTCTTGACGTTGGATCTTTGGCGGAGAAAAATGGAATGAGGTTCACTTC 840

RESULT 6
US-10-731-554-41
; Sequence 41, Application US/10731554
; Publication No. US20040247616A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/10/731,554
; CURRENT FILING DATE: 2003-12-09
; PRIOR FILING DATE: US/09/811,007
; PRIOR APPLICATION NUMBER: 2001-03-16
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 41
; LENGTH: 840
; TYPE: DNA
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: nucleic acid sequence of E. canis p28-2
US-10-731-554-41

Query Match 100.0%; Score 840; DB 20; Length 840;
Best Local Similarity 100.0%; Pred. No. 8e-172;
Matches 840; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 ATGAATTTATAAGAAAAATTTCTAGTAAGAAGCGGTTAATCTCATTAATGTCAATCTTACCA 60
Db 1 ATGAATTTATAAGAAAAATTTCTAGTAAGAAGCGGTTAATCTCATTAATGTCAATCTTACCA 60

Qy 61 TATCAGTCTTTTGCAGATCTCTGTAGGTTCAAGAACTAATGTAACAAGAGGCTTCTAC 120
Db 61 TATCAGTCTTTTGCAGATCTCTGTAGGTTCAAGAACTAATGTAACAAGAGGCTTCTAC 120
```


QY 121 ATTAGTGCAAGTCAATCCAGATATATCA CATTAGAAAAATCTCTGCTGAAGAACT 180
DB 121 ATTAGTGCAAGTCAATCCAGATATATCA CATTAGAAAAATCTCTGCTGAAGAACT 180
QY 181 CCTATTATGCAACAAATCTCTCACTAAAGATTTTCGACATAAAGAAAGATGGTAT 240
DB 181 CCTATTATGCAACAAATCTCTCACTAAAGATTTTCGACATAAAGAAAGATGGTAT 240
QY 241 ATAACAAAAAGACGATTTTACAGAGTAGCTCCAGGCATTTGATTTTCAAAATAACTTA 300
DB 241 ATAACAAAAAGACGATTTTACAGAGTAGCTCCAGGCATTTGATTTTCAAAATAACTTA 300
QY 301 ATATCAGATTTTTCAGGAAGTATTTGTTACTCTATGGAACGCAACAAAGATAGAACTTGAA 360
DB 301 ATATCAGATTTTTCAGGAAGTATTTGTTACTCTATGGAACGCAACAAAGATAGAACTTGAA 360
QY 361 GCTGCATATCAACAAATTTAAATCCAAAAACACCGATACCAATGATATCTGATAATGGTGA 420
DB 361 GCTGCATATCAACAAATTTAAATCCAAAAACACCGATACCAATGATATCTGATAATGGTGA 420
QY 421 TACTATAAACATTTTGCATTAATCTCGTAAAGATCAATGGAAGATCAGCAATATGTAGTA 480
DB 421 TACTATAAACATTTTGCATTAATCTCGTAAAGATCAATGGAAGATCAGCAATATGTAGTA 480
QY 481 CTTAAAAATGACCGATAACTTTTATGTCATGTAGTGTATTAATCTGCTATGACATTAACA 540
DB 481 CTTAAAAATGACCGATAACTTTTATGTCATGTAGTGTATTAATCTGCTATGACATTAACA 540
QY 541 GCTGAAGAGTATCTTTGCTACCATATGCAATGCAATGCAATGCAATGCAATGCAATGCAAT 600
DB 541 GCTGAAGAGTATCTTTGCTACCATATGCAATGCAATGCAATGCAATGCAATGCAATGCAAT 600
QY 601 ATTTTAAAGACCTCAATCTAAAAATTTGCTTACCAAGGAAAAATAGGTATTTAGTTACCT 660
DB 601 ATTTTAAAGACCTCAATCTAAAAATTTGCTTACCAAGGAAAAATAGGTATTTAGTTACCT 660
QY 661 ATCAACAGAAAGTCTCTGCAATTTATTTGTTGGATACCTACCATGGCGTTATTTGGTAATAA 720
DB 661 ATCAACAGAAAGTCTCTGCAATTTATTTGTTGGATACCTACCATGGCGTTATTTGGTAATAA 720
QY 721 TTTGAGAGATACCTGTAATTAATCTCTGTAATTAATGATGCTCTCAACCAATCT 780
DB 721 TTTGAGAGATACCTGTAATTAATCTCTGTAATTAATGATGCTCTCAACCAATCT 780
QY 781 GCTTCAGTAACCTCTTGACGTTGGATACCTTTGGCGGAGAAATTTGGAATGAGGTTCCACCTTC 840
DB 781 GCTTCAGTAACCTCTTGACGTTGGATACCTTTGGCGGAGAAATTTGGAATGAGGTTCCACCTTC 840

RESULT 7

US-10-059-964-47
; Sequence 47, Application US/10059964
; Publication No. US20020120115A1
; GENERAL INFORMATION:
; APPLICANT: Rikihisa, Yasuko
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia
; FILE OF INVENTION: Chaffeensis
; CURRENT APPLICATION NUMBER: US/10/059,964
; EARLIER FILING DATE: 2002-01-28
; EARLIER FILING DATE: 1999-05-19
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 47
; LENGTH: 843
; TYPE: DNA
; ORGANISM: Ehrlichia canis
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1) ... (843)

US-10-059-964-47

Query Match 100.0%; Score 840; DB 13; Length 843;
Best Local Similarity 100.0%; Pred. No. 8, 1e-172;
Matches 840; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 ATGAATTTATAGAAAAATCTTAGTAAGAGCGGTAAATCTCATTTAATGTCAATCTTACCA 60
DB 1 ATGAATTTATAGAAAAATCTTAGTAAGAGCGGTAAATCTCATTTAATGTCAATCTTACCA 60
QY 61 TATCAGTCTTTTCGACATCTCTGAGTTCAGAACTAATGATACAAAGAGGCTTCTAC 120
DB 61 TATCAGTCTTTTCGACATCTCTGAGTTCAGAACTAATGATACAAAGAGGCTTCTAC 120
QY 121 ATTAGTGCAAGTACAAATCCAAATATATCACATTTTAGAAAAATCTCTGCTGAAGAACT 180
DB 121 ATTAGTGCAAGTACAAATCCAAATATATCACATTTTAGAAAAATCTCTGCTGAAGAACT 180
QY 181 CCTATTATGGAACAAATTTCTCTCACTAAAAAGTTTTTCGGACTAAAGAAAGATGGTAT 240
DB 181 CCTATTATGGAACAAATTTCTCTCACTAAAAAGTTTTTCGGACTAAAGAAAGATGGTAT 240
QY 241 ATAACAAAAAGACGATTTTACAGAGTAGCTCCAGGCATTTGATTTTCAAAATAACTTA 300
DB 241 ATAACAAAAAGACGATTTTACAGAGTAGCTCCAGGCATTTGATTTTCAAAATAACTTA 300
QY 301 ATATCAGGATTTTTCAGGAAGTATTTGTTACTCTATGGAACGCAACAAAGATAGAACTTGAA 360
DB 301 ATATCAGGATTTTTCAGGAAGTATTTGTTACTCTATGGAACGCAACAAAGATAGAACTTGAA 360
QY 361 GCTGCATATCAACAAATTTTAAATCCAAAAACACCGATACCAATGATGATGATGTTGTA 420
DB 361 GCTGCATATCAACAAATTTTAAATCCAAAAACACCGATACCAATGATGATGATGTTGTA 420
QY 421 TACTATAAACATTTTGCATTAATCTCGTAAAGATGCAATGGAAGATCAGCAATATGTAGTA 480
DB 421 TACTATAAACATTTTGCATTAATCTCGTAAAGATGCAATGGAAGATCAGCAATATGTAGTA 480
QY 481 CTTAAAAATGACCGCATAACTTTTATGTCATTTGTTGGTAAATCTGCTATGACATTAACA 540
DB 481 CTTAAAAATGACCGCATAACTTTTATGTCATTTGTTGGTAAATCTGCTATGACATTAACA 540
QY 541 GCTGAAGAGTATCTTTGCTGTAACATATGCAATGCAATGCAATGCAATGCAATGCAATGCAAT 600
DB 541 GCTGAAGAGTATCTTTGCTGTAACATATGCAATGCAATGCAATGCAATGCAATGCAATGCAAT 600
QY 601 ATTTTAAAGACCTCAATCTAAAAATTTGCTTACCAAGGAAAAATAGGTATTTAGTTACCT 660
DB 601 ATTTTAAAGACCTCAATCTAAAAATTTGCTTACCAAGGAAAAATAGGTATTTAGTTACCT 660
QY 661 ATCAACAGAAAGTCTCTGCAATTTATTTGTTGGATACCTACCATGGCGTTATTTGGTAATAA 720
DB 661 ATCAACAGAAAGTCTCTGCAATTTATTTGTTGGATACCTACCATGGCGTTATTTGGTAATAA 720
QY 721 TTTGAGAGATACCTGTAATTAATCTCTGTAATTAATGATGCTCTCAACCAATCT 780
DB 721 TTTGAGAGATACCTGTAATTAATCTCTGTAATTAATGATGCTCTCAACCAATCT 780
QY 781 GCTTCAGTAACCTCTTGACGTTGGATACCTTTGGCGGAGAAATTTGGAATGAGGTTCCACCTTC 840
DB 781 GCTTCAGTAACCTCTTGACGTTGGATACCTTTGGCGGAGAAATTTGGAATGAGGTTCCACCTTC 840

RESULT 8

US-10-314-639-47
; Sequence 47, Application US/10314639
; Publication No. US20030103991A1
; GENERAL INFORMATION:
; APPLICANT: Rikihisa, Yasuko
; APPLICANT: Ohasi, No. US20030103991A1
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia
; TITLE OF INVENTION: Chaffeensis
; FILE REFERENCE: 22727/04021

;
; CURRENT APPLICATION NUMBER: US/10/314,639
; CURRENT FILING DATE: 2002-12-09
; PRIOR APPLICATION NUMBER: US/09/314,701
; PRIOR FILING DATE: 1999-05-19
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 47
; LENGTH: 843
; TYPE: DNA
; ORGANISM: Ehrlichia canis
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)...(843)
US-10-314-639-47

Query Match 100.0%; Score 840; DB 15; Length 843;
Best Local Similarity 100.0%; Pred. No. 8.1e-172;
Matches 840; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 ATGAATTATAGAAATCTAGTAAGAGCGGTTAATCTCATTAATGTCAATCTTACCA 60
Db |||||
Qy 1 ATGAATTATAGAAATCTAGTAAGAGCGGTTAATCTCATTAATGTCAATCTTACCA 60
Db |||||
Qy 61 TATCAGTCTTTTGCAGATCTCTGAGTTCAGAACTAATGATAACAAGAGGCTTCTAC 120
Db |||||
Qy 61 TATCAGTCTTTTGCAGATCTCTGAGTTCAGAACTAATGATAACAAGAGGCTTCTAC 120
Db |||||
Qy 121 ATTAGTGCAGATCAATCAAGATATATACATCTTAGAAAAATCTCTGCTGAAGAACT 180
Db |||||
Qy 121 ATTAGTGCAGATCAATCAAGATATATACATCTTAGAAAAATCTCTGCTGAAGAACT 180
Db |||||
Qy 181 CCTATTAAATGGAACAAATCTCTCAGTAAAGAGTTTTCGGACTAAAGAAAGATGGTAT 240
Db |||||
Qy 181 CCTATTAAATGGAACAAATCTCTCAGTAAAGAGTTTTCGGACTAAAGAAAGATGGTAT 240
Db |||||
Qy 241 ATAACAAAAAGAGAGATTTTACAAGAGTAGCTCCAGGCAATGATTTTCAAAATAACTTA 300
Db |||||
Qy 241 ATAACAAAAAGAGAGATTTTACAAGAGTAGCTCCAGGCAATGATTTTCAAAATAACTTA 300
Db |||||
Qy 301 ATATCAGGATTTTCAAGAGATATGTTGTTACTCTATGGAACGACCAAGATAGAACTTGAA 360
Db |||||
Qy 301 ATATCAGGATTTTCAAGAGATATGTTGTTACTCTATGGAACGACCAAGATAGAACTTGAA 360
Db |||||
Qy 361 GCTGCATATCAACAATTTAATCCAAAAACACCGATAACTGATCTGATATGTTGTA 420
Db |||||
Qy 361 GCTGCATATCAACAATTTAATCCAAAAACACCGATAACTGATCTGATATGTTGTA 420
Db |||||
Qy 421 TACTATAAACAATTTTGCATTTATCTCGTAAAGATGCAATGGAAGATCAGCAATATGTAGTA 480
Db |||||
Qy 421 TACTATAAACAATTTTGCATTTATCTCGTAAAGATGCAATGGAAGATCAGCAATATGTAGTA 480
Db |||||
Qy 481 CTTAAAAATGACGGCAATACTTTTATGCTATTGTTAATGCTTAACTGCTATGACATTACA 540
Db |||||
Qy 481 CTTAAAAATGACGGCAATACTTTTATGCTATTGTTAATGCTTAACTGCTATGACATTACA 540
Db |||||
Qy 541 GCTGAAGAGATCTCTGATTAATCTCTGATGATGATGATGATGATGATGATGATGATGAT 600
Db |||||
Qy 541 GCTGAAGAGATCTCTGATTAATCTCTGATGATGATGATGATGATGATGATGATGATGAT 600
Db |||||
Qy 601 ATTTTAAAAAGACCTCAATCTAAAATTTGCTTACCAAGAAAAATAGGTATAGTTACCCCT 660
Db |||||
Qy 601 ATTTTAAAAAGACCTCAATCTAAAATTTGCTTACCAAGAAAAATAGGTATAGTTACCCCT 660
Db |||||
Qy 661 ATCACACAGAGATCTCTGATTAATCTCTGATGATGATGATGATGATGATGATGATGATGAT 720
Db |||||
Qy 661 ATCACACAGAGATCTCTGATTAATCTCTGATGATGATGATGATGATGATGATGATGATGAT 720
Db |||||
Qy 721 TTTGAGAAGATACCTGTAATCTCTGATGATGATGATGATGATGATGATGATGATGATGATGAT 780
Db |||||
Qy 721 TTTGAGAAGATACCTGTAATCTCTGATGATGATGATGATGATGATGATGATGATGATGATGAT 780
Db |||||
Qy 781 GCTTCAGTAACCTCTGATGATGATGATGATGATGATGATGATGATGATGATGATGATGATGAT 840
Db |||||

Db 781 GCTTCAGTAACCTCTGATGATGATGATGATGATGATGATGATGATGATGATGATGATGATGAT 840

RESULT 9
US-10-901-714-47
; Sequence 47, Application US/10901714
; Publication No. US20040265333A1
; GENERAL INFORMATION:
; APPLICANT: RIKIHISA, YASUKO
; APPLICANT: OHASHI, NORIO
; TITLE OF INVENTION: OUTER MEMBRANE PROTEIN OF EHRlichia CANIS AND EHRlichia
; TITLE OF INVENTION: CHAFFENSIS
; FILE REFERENCE: 22727-04109
; CURRENT APPLICATION NUMBER: US/10/901,714
; CURRENT FILING DATE: 2004-07-29
; PRIOR APPLICATION NUMBER: 09/314,701
; PRIOR FILING DATE: 1999-05-19
; PRIOR APPLICATION NUMBER: 60/100,843
; PRIOR FILING DATE: 1998-09-18
; NUMBER OF SEQ ID NOS: 69
; SOFTWARE: PatentIn Ver. 3.2
; SEQ ID NO 47
; LENGTH: 843
; TYPE: DNA
; ORGANISM: Ehrlichia canis
US-10-901-714-47

Query Match 100.0%; Score 840; DB 20; Length 843;
Best Local Similarity 100.0%; Pred. No. 8.1e-172;
Matches 840; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 ATGAATTATAGAAATCTAGTAAGAGCGGTTAATCTCATTAATGTCAATCTTACCA 60
Db |||||
Qy 1 ATGAATTATAGAAATCTAGTAAGAGCGGTTAATCTCATTAATGTCAATCTTACCA 60
Db |||||
Qy 61 TATCAGTCTTTTGCAGATCTCTGAGTTCAGAACTAATGATAACAAGAGGCTTCTAC 120
Db |||||
Qy 61 TATCAGTCTTTTGCAGATCTCTGAGTTCAGAACTAATGATAACAAGAGGCTTCTAC 120
Db |||||
Qy 121 ATTAGTGCAGATCAATCAAGATATATACATCTTAGAAAAATCTCTGCTGAAGAACT 180
Db |||||
Qy 121 ATTAGTGCAGATCAATCAAGATATATACATCTTAGAAAAATCTCTGCTGAAGAACT 180
Db |||||
Qy 181 CCTATTAAATGGAACAAATCTCTCAGTAAAGAGTTTTCGGACTAAAGAAAGATGGTAT 240
Db |||||
Qy 181 CCTATTAAATGGAACAAATCTCTCAGTAAAGAGTTTTCGGACTAAAGAAAGATGGTAT 240
Db |||||
Qy 241 ATAACAAAAAGAGAGATTTTACAAGAGTAGCTCCAGGCAATGATTTTCAAAATAACTTA 300
Db |||||
Qy 241 ATAACAAAAAGAGAGATTTTACAAGAGTAGCTCCAGGCAATGATTTTCAAAATAACTTA 300
Db |||||
Qy 301 ATATCAGGATTTTCAAGAGATATGTTGTTACTCTATGGAACGACCAAGATAGAACTTGAA 360
Db |||||
Qy 301 ATATCAGGATTTTCAAGAGATATGTTGTTACTCTATGGAACGACCAAGATAGAACTTGAA 360
Db |||||
Qy 361 GCTGCATATCAACAATTTAATCCAAAAACACCGATAACTGATCTGATATGTTGTA 420
Db |||||
Qy 361 GCTGCATATCAACAATTTAATCCAAAAACACCGATAACTGATCTGATATGTTGTA 420
Db |||||
Qy 421 TACTATAAACAATTTTGCATTTATCTCGTAAAGATGCAATGGAAGATCAGCAATATGTAGTA 480
Db |||||
Qy 421 TACTATAAACAATTTTGCATTTATCTCGTAAAGATGCAATGGAAGATCAGCAATATGTAGTA 480
Db |||||
Qy 481 CTTAAAAATGACGGCAATACTTTTATGCTATTGTTAATGCTTAACTGCTATGACATTACA 540
Db |||||
Qy 481 CTTAAAAATGACGGCAATACTTTTATGCTATTGTTAATGCTTAACTGCTATGACATTACA 540
Db |||||
Qy 541 GCTGAAGAGATCTCTGATTAATCTCTGATGATGATGATGATGATGATGATGATGATGATGAT 600
Db |||||
Qy 541 GCTGAAGAGATCTCTGATTAATCTCTGATGATGATGATGATGATGATGATGATGATGATGAT 600
Db |||||
Qy 601 ATTTTAAAAAGACCTCAATCTAAAATTTGCTTACCAAGAAAAATAGGTATAGTTACCCCT 660
Db |||||

601	ATTTTAAAGCCTCAATCTAAATAATTCGTTACCAAGGAAAAATAGGTATTAAGTTACCCCT	660
661	ATCACACAGAAAGTCTCTGCATTTATTGGTGGATACTACCATGGCGGTTATTGGTAAATAAA	720
661	ATCACACAGAAAGTCTCTGCATTTATTGGTGGATACTACCATGGCGGTTATTGGTAAATAAA	720
721	TTTGAGAAAGATACCTGTGTAATAACTCCTCTGTAGTATTAAATGATGCTCTCTCAAAACCAATCT	780
721	TTTGAGAAAGATACCTGTGTAATAACTCCTCTGTAGTATTAAATGATGCTCTCTCAAAACCAATCT	780
781	GCCTTCAGTAACTCTTGACGTTGGATACHTTTGGCGGAGAAAATTGGAAATGAGGTTACCTTC	840
781	GCCTTCAGTAACTCTTGACGTTGGATACHTTTGGCGGAGAAAATTGGAAATGAGGTTACCTTC	840

```

RESULT 10
US-10-901-774-47
; Sequence 47, Application US/10901774
; Publication No. US20040265334A1
; GENERAL INFORMATION:
; APPLICANT: RIKIHISA, YASUKO
; APPLICANT: OHASHI, NORIO
; TITLE OF INVENTION: OUTER MEMBRANE PROTEIN OF EHRlichia CANIS AND EHRlichia
; TITLE OF INVENTION: CHAFRENSIS
; FILE REFERENCE: 22727-04109
; CURRENT APPLICATION NUMBER: US/10/901,774
; CURRENT FILING DATE: 2004-07-29
; PRIOR APPLICATION NUMBER: 09/314,701
; PRIOR FILING DATE: 1999-05-19
; PRIOR APPLICATION NUMBER: 60/100,843
; PRIOR FILING DATE: 1998-09-18
; NUMBER OF SEQ ID NOS: 69
; SOFTWARE: PatentIn ver. 3.2
; SEQ ID NO 47
; LENGTH: 843
; TYPE: DNA
; ORGANISM: Ehrlichia canis
; US-10-901-774-47

```

Query Match	100.0%	Score 840	DB 20	Length 843
Best Local Similarity	100.0%	Pred. NO.	8.1e-172	
Matches 840	Conservative	0	Mismatches 0	Indels 0
				Gaps 0

Qy	1	ATGAATTATTAAGAAAAATTTCTAGTAGAAGACGGTTAAATCTCAATTAATGTCAAATCTTACCA	60
Db	1	ATGAATTATTAAGAAAAATTTCTAGTAGAAGACGGTTAAATCTCAATTAATGTCAAATCTTACCA	60
Qy	61	TATCAGTCTTTTGCAGATCCTGTAGGTTTCAAGNACTAATGATAACAAGAGAGGCTTCTAC	120
Db	61	TATCAGTCTTTTGCAGATCCTGTAGGTTTCAAGACTAATGATAACAAGAGAGGCTTCTAC	120
Qy	121	ATTAGTGC AAAAGTCAAACTCCAAGTATATCACACTTTAGAAAAATCTCTGCTGCAAGAACT	180
Db	121	ATTAGTGC AAAAGTCAAACTCCAAGTATATCACACTTTAGAAAAATCTCTGCTGCAAGAACT	180
Qy	181	CCTATTAAATGGAACAAATTTCTCTCACTAAAAAGTTTTTCGGACTAAAGAAAAGATGGTGAT	240
Db	181	CCTATTAAATGGAACAAATTTCTCTCACTAAAAAGTTTTTCGGACTAAAGAAAAGATGGTGAT	240
Qy	241	ATAACAAAAAAGACGATTTTACAAGATAGCTCCAGGCAATGATTTTCAAAATTAACCTTA	300
Db	241	ATAACAAAAAAGACGATTTTACAAGATAGCTCCAGGCAATGATTTTCAAAATTAACCTTA	300
Qy	301	ATATCAGGATTTTTCAGGAAGATTTGGTTTACTCTATGAGCGGACCAAGAAATGAACCTTGA	360
Db	301	ATATCAGGATTTTTCAGGAAGATTTGGTTTACTCTATGAGCGGACCAAGAAATGAACCTTGA	360
Qy	361	GCTGCATATCAACAATTTTAAATCCAAAAAACCCGATAACAATGATACTGATAATGGTGAA	420
Db	361	GCTGCATATCAACAATTTTAAATCCAAAAAACCCGATAACAATGATACTGATAATGGTGAA	420
Qy	421	TACTATAAACATTTTGCATTATCTCGTAAAGATGCAATGGGAAGATCAGCAATATCTGATGA	480

Db	421	TACTATAAACAATTTTGCATTATCTCGTAAAGATGCAATGGGAAGATCAGCAATATGTAGTA	480
Qy	481	CTTAAAAATGACGGCATAACTTTTATGTGTCATTGATGGTTAATACTTGTCTATGACATTACA	540
Db	481	CTTAAAAATGACGGCATAACTTTTATGTGTCATTGATGGTTAATACTTGTCTATGACATTACA	540
Qy	541	GCTGAAGGAGTATCTTTTCGTAACCATATGCAATGTCAGGTATAGGAGCAGATCTTATCACT	600
Db	541	GCTGAAGGAGTATCTTTTCGTAACCATATGCAATGTCAGGTATAGGAGCAGATCTTATCACT	600
Qy	601	ATTTTTHAAGACCTCAATCTAAAATTTGCTTACCAAGGAAAAATAGGTATTAGTTACCCCT	660
Db	601	ATTTTTHAAGACCTCAATCTAAAATTTGCTTACCAAGGAAAAATAGGTATTAGTTACCCCT	660
Qy	661	ATCACACGAGAAGTCTCTGCAATTTATTGGTGGATACTACCATGGCGTTATTGGTAAATAAA	720
Db	661	ATCACACGAGAAGTCTCTGCAATTTATTGGTGGATACTACCATGGCGTTATTGGTAAATAAA	720
Qy	721	TTTGAGAAGATACCTGTAATAAATCCCTGTAGTATTTAAATGATGCTCTCAAACCAACATCT	780
Db	721	TTTGAGAAGATACCTGTAATAAATCCCTGTAGTATTTAAATGATGCTCTCAAACCAACATCT	780
Qy	781	GCCTTCAGTAACTCTTTGACGTTGGATATCTTTGGCGGAGAAATTGGAATGAGGTTCACTTC	840
Db	781	GCCTTCAGTAACTCTTTGACGTTGGATATCTTTGGCGGAGAAATTGGAATGAGGTTCACTTC	840

```

RESULT 11
US-10-059-964-3
; Sequence 3, Application US/10059964
; Publication No. US20020120115A1
; GENERAL INFORMATION:
; APPLICANT: Rikihisa, Yasuko
; APPLICANT: Ohasi, No. US20020120115A1io
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia
; FILE OF INVENTION: Chaffeensis
; FILE REFERENCE: 22727/04021
; CURRENT APPLICATION NUMBER: US/10/059,964
; CURRENT FILING DATE: 2002-01-28
; EARLIER APPLICATION NUMBER: 09/314,701
; EARLIER FILING DATE: 1999-05-19
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 3
; LENGTH: 852
; TYPE: DNA
; ORGANISM: Ehrlichia chaffeensis
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1) . (852)
US-10-059-964-3

```

Query Match	71.3%	Score 598.6	DB 13	Length 852
Best Local Similarity	82.6%	Pred. No. 1.4e-119		
Matches 701	Conservative 0	Mismatches 139	Indels 9	Gaps 1
Qy	1	ATGAATTATTAAGAAAAATTTCTAGTAAGAAGCGCGTTAATCTCATTAAATGTCAAATCTTACCA	60	
Db	1	ATGNATTACAAGAAAAATTTTGTGAAGCAGTGCATTAAATTTTCATTAAATGTCAAATCTTACCT	60	
Qy	61	TATCAGTCTTTTGCAGATCTCTGTAGTGTCAA-----GAACATAATGATAACAAGAA	111	
Db	61	TACCAATCTTTTGCAGATCTCTGTAACTTCAAATGATACAGGAATCAACGACGACGAGAA	120	
Qy	112	GGCTTCTACATTAGTGCAAAAGTCAAAATCCAAAGTATATCACACTTTTAGAAAAATTTCTCTGCT	171	
Db	121	GGCTTCTCATATTAGTGTAAAGTATAATCCAAAGCATATCACACTTTCAGAAAAATTTCTCAGCT	180	
Qy	172	GAGAAACTCCTATTAAATGGAACAAATTTCTCTCACTAAAAAGTTTTTCGGACTAAAGAAA	231	
Db	181	GAGAAGCTCCCATCAATGGAATACTTTCTATCATCTAAAAAGGTTTTTCGGGCTGAAAAAA	240	
Qy	232	GATGGTGTATATAACAAAAAAGACGATTTTACAAGAGTAGTCTCCAGGCAATTTGATTTTCAA	291	

Db 241 GACGGAGATATAGACAAATCTGCGAAATTTTAAACAGGACAGATCCAGCCCTCGAGTTTCAG 300
Qy 292 AATAACTTAATATACGAGTTTTCAGGAAGTATGGTTACTCTATGGACGGAACCAAGAAATA 351
Db 301 AATAACCTAATATACGAGTTTCTCAGGAAGTATGGTTATGCTATGGATGGCCCAAGAAATA 360
Qy 352 GAACTTCAAGCTGATATCAACATTTTAAATCCCAAAAACCCGATACCAATGATACCTGAT 411
Db 361 GAACTTGAAGCTGATATCAACAAATTTTAAATCCCAAAAACCCGATACCAATGATACCTGAT 420
Qy 412 AATGGTGAATACATATAACAACTTTTGGCAATATCTGTAAGATGCAATGGAAGATCAGCAA 471
Db 421 AGCGGTGACTACTATAAATCTTTGGACTATCTGTAAGATGCAATGGAAGATCAGCAA 480
Qy 472 TATGTAGTACTTAAATATGACGAGTAACTTTTAAATGATGATGATGATGATGATGATGAT 531
Db 481 TATGTGTCTTAAATATGAGGATCACTTTTAAATGATGATGATGATGATGATGATGATGAT 540
Qy 532 GACATTACAGCTGAAGAGTATCTTTGCTACCATATGATGATGATGATGATGATGATGATGAT 591
Db 541 GACATTACAGCTGAAGAGTATCTTTGCTACCATATGATGATGATGATGATGATGATGATGAT 600
Qy 592 CTTATCACTATTTTAAAGACCTCAATCTAAATTTTCTTACCAAGGAAAAATAGGTATT 651
Db 601 CTTATAACGATTTTAAAGATTTTAAATTTTAAATTTTCTTACCAAGGAAAAATAGGTATT 660
Qy 652 AGTTACCTATACACAGAGTCTCTGCAATTTTAAATGATGATGATGATGATGATGATGATGAT 711
Db 661 AGCTATCCAATACACAGAGTCTCTGCAATTTTAAATGATGATGATGATGATGATGATGATGAT 720
Qy 712 GGTAAATATTTGAGAGATACCTGTAATTAACCTCTGATGATGATGATGATGATGATGATGAT 771
Db 721 GGAATAATTTTAAACAAATACCTGTAATTAACCTCTGATGATGATGATGATGATGATGATGAT 780
Qy 772 ACCACATCTGCTTCACTAACTCTTGGGTTGGATACCTTGGGAGAGAAATGGAAATGAGG 831
Db 781 ACAACATCTGGCTAGTAACTTATGACACTGGATACCTTGGGAGAGAAATGGAAATGAGG 840
Qy 832 TTCACCTTC 840
Db 841 TTCACCTTC 849

RESULT 12

US-10-639-3
; Sequence 3, Application US/10314639
; Publication No. US20030103991A1
; GENERAL INFORMATION:
; APPLICANT: Rikihisa, Yasuko
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia
; TITLE OF INVENTION: Chaffensis
; FILE REFERENCE: 22727/04021
; CURRENT APPLICATION NUMBER: US/10/314,639
; CURRENT FILING DATE: 2002-12-09
; PRIOR APPLICATION NUMBER: US/09/314,701
; PRIOR FILING DATE: 1999-05-19
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 3
; LENGTH: 852
; TYPE: DNA
; ORGANISM: Ehrlichia chaffensis
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(852)
US-10-314-639-3

Query Match 71.3%; Score 598.6; DB 15; Length 852;
Best Local Similarity 82.6%; Pred. No. 1.4e-119;
Matches 701; Conservative 0; Mismatches 139; Indels 9; Gaps 1;

Qy 1 ATGAATTATAAGAAATCTTAGTAAGAGCGGTTAAATCTCATTAATGTCAATCTTACCA 60
Db 1 ATGAATTATAAGAAATCTTAGTAAGAGCGGTTAAATCTCATTAATGTCAATCTTACCA 60
Qy 61 TATCAGTCTTTTGCAGATCTCTGATGTTCAA-----GAACTAATGATAACAAGAA 111
Db 61 TACCAATCTTTTGCAGATCTCTGATGTTCAA-----GAACTAATGATAACAAGAA 120
Qy 112 GGTCTTACATTAATGATGATCAATCCAAAGTATATACACTTTAGAAAATTTCTGCT 171
Db 121 GGTCTTACATTAATGATGATCAATCCAAAGTATATACACTTTAGAAAATTTCTGCT 180
Qy 172 GAAGAACTCTCTAATTAATGGAACAAATTTCTCACTAAAGAGTTTTCGAGCTAAAGAAA 231
Db 181 GAAGAACTCTCTAATTAATGGAACAAATTTCTCACTAAAGAGTTTTCGAGCTAAAGAAA 240
Qy 232 GATGGTGAATATAACAAAAAAGACGATTTTAAAGAGTACCTCCAGGCAATTTGATTTTCAA 291
Db 241 GACGGAGATATAGCAAAATCTCGCAATTTTAAACAGGACAGATCCAGCCCTCGAGTTTCAG 300
Qy 292 AATAACTTAATATCAGGATTTTTCAGGAAGTATTTGGTTACTCTATGAGACGACCAAGAAATA 351
Db 301 AATAACTTAATATCAGGATTTTTCAGGAAGTATTTGGTTACTCTATGAGACGACCAAGAAATA 360
Qy 352 GAACTTGAAGCTGATATCAACAAATTTTAAATCCAAAAACACCGATACCAATGATGATGAT 411
Db 361 GAACTTGAAGCTGATATCAACAAATTTTAAATCCAAAAACACCGATACCAATGATGATGAT 420
Qy 412 AATGGTGAATATATATAACAAATTTTGGCAATTTTCTGTAAGAGATGCAATGGAAGATCAGCAA 471
Db 421 AGCGGTGACTACTATAAATCTTTGGCAATTTTCTGTAAGAGATGCAATGGAAGATCAGCAA 480
Qy 472 TATGTAGTACTTAAATATGACGAGTAACTTTTATGCTATGATGATGATGATGATGATGATGAT 531
Db 481 TATGTGTCTTAAATATGAGGATCACTTTTATGCTATGATGATGATGATGATGATGATGATGAT 540
Qy 532 GACATTACAGCTGAAGAGTATCTTTGCTACCATATGATGATGATGATGATGATGATGATGAT 591
Db 541 GACATTACAGCTGAAGAGTATCTTTGCTACCATATGATGATGATGATGATGATGATGATGAT 600
Qy 592 CTTATCACTATTTTAAAGACCTCAATCTAAATTTTGGTTTACCAAGGAAAAATAGGTATT 651
Db 601 CTTATAACGATTTTAAAGATTTTAAATTTTAAATTTTCTCATAACCAAGGAAAAATAGGTATT 660
Qy 652 AGTTACCTATACACAGAGTCTCTGCAATTTTAAATGATGATGATGATGATGATGATGATGAT 711
Db 661 AGCTATCCAATACACAGAGTCTCTGCAATTTTAAATGATGATGATGATGATGATGATGATGAT 720
Qy 712 GGTAAATATTTGAGAGATACCTGTAATTAACCTCTGATGATGATGATGATGATGATGATGAT 771
Db 721 GGAATAATTTTAAACAAATACCTGTAATTAACCTCTGATGATGATGATGATGATGATGATGAT 780
Qy 772 ACCACATCTGCTTCACTAACTCTTGGGTTGGATACCTTGGGAGAGAAATGGAAATGAGG 831
Db 781 ACAACATCTGGCTAGTAACTTATGACACTGGATACCTTGGGAGAGAAATGGAAATGAGG 840
Qy 832 TTCACCTTC 840
Db 841 TTCACCTTC 849

RESULT 13

US-10-901-714-3
; Sequence 3, Application US/10901714
; Publication No. US20040265333A1
; GENERAL INFORMATION:
; APPLICANT: RIKIHISA, YASUKO
; APPLICANT: OHASHI, NORIO
; TITLE OF INVENTION: OUTER MEMBRANE PROTEIN OF EHRlichia CANIS AND EHRlichia
; TITLE OF INVENTION: CHAFFENSIS
; FILE REFERENCE: 22727-04109
; CURRENT APPLICATION NUMBER: US/10/901,714
; CURRENT FILING DATE: 2004-07-29

```

Db      841  TTCACCTTC 849
|||||||
RESULT 14
US-10-901-774-3
; Sequence 3, Application US/10901774
; Publication No. US20040265334A1
; GENERAL INFORMATION:
; APPLICANT: RIKIHISA, YASUKO
; APPLICANT: OHASHI, NORIO
; TITLE OF INVENTION: OUTER MEMBRANE PROTEIN OF EHRlichia CANIS AND EHRlichia
; TITLE OF INVENTION: CHAFFEENSIS
; FILE REFERENCE: 22727-04109
; CURRENT APPLICATION NUMBER: US/10/901.774
; CURRENT FILING DATE: 2004-07-29
; PRIOR APPLICATION NUMBER: 09/314,701
; PRIOR FILING DATE: 1999-05-19
; PRIOR APPLICATION NUMBER: 60/100,843
; PRIOR FILING DATE: 1998-09-18
; NUMBER OF SEQ ID NOS: 69
; SOFTWARE: PatentIn Ver. 3.2
; SEQ ID NO 3
; LENGTH: 852
; TYPE: DNA
; ORGANISM: Ehrlichia chaffeensis
US-10-901-774-3

Query Match      71.3%; Score 598.6; DB 20; Length 852;
Best Local Similarity 82.6%; Pred. No. 1.4e-119; Indels 9; Gaps 1
Matches 701; Conservative 0; Mismatches 139;

Qy      1  ATGAATTATTAAGAAAAATTTCTAGTAAGAAGCGCGTTAATCTCATTAATGTCGAATCTTACCA 60
      |||||
Db      1  ATGAATTACAAGAAAAATTTTGTGAAGCAGTGCATTAATTTTCATTAATGTCGAATCTTACCT 60

Qy     61  TATCAGTCCTTTTGCAGATCTCTGTAGTTCAA-----GAACTAATGATAACAAGAA 111
      |||||
Db     61  TACCAATCTTTTGCAGATCTCTGTAACCTTCAAAATGATACAGGAATCAACGACAGCAGAGAA 120

Qy    112  GGCTTCTACATTAGTCGAAAGTACAATCCCAAGTATATCACACTTTAGBAATTTCTCTGCT 171
      |||||
Db    121  GGCTTCTACATTAGTGTAAAGTATAATCCCAAGCATATCACACTTCAGAAAAATTCCTCAGCT 180

Qy    172  GAAGAAACTCCTATTAATGGAACAAATTTCTCTCACTAAAAAGTTTTCGGACTAAAGAAA 231
      |||||
Db    181  GAAGAGCTCCCATCAATGANAATCTTCTATCACTAAAAAGTTTTCGGGCTGAAAAA 240

Qy    232  GATGGTGATATAACAAAAAAGACGATTTTACAAGAGTAGCTCCAGGCATTTGATTTTCAA 291
      |||||
Db    241  GACGGAGATATAGCAAACTCTCGGAAATTTTAAACAGGACAGATCCAGCCCTCGAGTTTCAG 300

Qy    292  AATAACTTAATATCAGGATTTTCAGGAAGTATTTGGTTACTCTATGGACGGACCAAGAATA 351
      |||||
Db    301  AATAACCTAATATCAGGATTTCTCAGGAAGTATTTGGTTATGCTATGGATGGGCGCAAGAATA 360

Qy    352  GAACCTGAAGCTGCATATCAACAATTTTAATCCAAAAAACCCGATAACAATGATACTGAT 411
      |||||
Db    361  GAACCTGAAGCTGCATACCAAAAATTTGATGCAAAAAAATCTGACACAAATGACACTAAT 420

Qy    412  AATGGTGAATATCATAAACATTTTGGCAATATCTCGTAAAGATGCAATGGAAGATCAGCAA 471
      |||||
Db    421  AGCGGTGACTACTATAAATACTTTGGGACTATCTCGTGAAGACGCAATAGCAGATAAGAAA 480

Qy    472  TATGTAGTACTTAAAAATGACGGCATAACTTTTATGTGATTTGATGGTTAATCTTGCTAT 531
      |||||
Db    481  TATGTTGCTCTTAAAAATGAAGGCATCACTTTTATGTATGTCAATTAATGGTTAAACACTTGT 540

Qy    532  GACATTACAGCTGAAGGAGTATCTTTTCGTACCATATGCATCTGCAGGTATAGGAGCAGAT 591
      |||||
Db    541  GACATTACAGCTGAAGGAGTACCTTTTCATACCGTATGCATGTGAGGGTGTAGGAGCAGAC 600

Qy    592  CTTATCACTATTTTTTAAAGACCTCAATCTCAAAATTTTGCTTACCAGGAAAAATATGGTATT 651
      |||||

```

```
Db 601 CTTATAACGTAATTAAAGGATTTTAAATTTAAATTTCTCATACCAAGGAAAAATAGGTATT 660
Qy 652 AGTTACCTATACACACAGAGCTCTCGCATTTATTTGGTGGATACATACCAATGCGGTATT 711
Db 661 AGCTATCCAATCACACCAGAGTTTCGCTTTTATTGGAGGATACTACCACGGAGTTATA 720
Qy 712 GGTATAAATTTGAGAGATACCTGTAAATACCTCCTGTAGTATTAAATGATGCTCCTCAA 771
Db 721 GGAATAAATTTTAAACAAAATACCTGTAAATACACCTGTAGTATTAGAGGAGCTCCTCAA 780
Qy 772 ACCACATCTCTTCAGTAACTCTTGAGCTTTGGGATACCTTTGGCGAGAAAAATTTGGAATGAGG 831
Db 781 ACAACATCTCGGTAGTAACTATTGACACTGGGATACTTTGGCGGAGAAAGTTGGAGTAAGG 840
Qy 832 TTCACCTTC 840
Db 841 TTCACCTTC 849

RESULT 15
US-10-138-162-48
; Sequence 48, Application US/10138162
; Publication No. US20050170341A1
; GENERAL INFORMATION:
; APPLICANT: STICH, ROGER WILLIAM
; APPLICANT: RIKIHISA, YASUKO
; TITLE OF INVENTION: METHOD FOR DETECTING EHRlichia CANIS AND EHRlichia
; TITLE OF INVENTION: CHAFFENSIS IN VERTEBRATE AND INVERTEBRATE HOSTS
; FILE REFERENCE: 22727/04121
; CURRENT APPLICATION NUMBER: US/10/138.162
; CURRENT FILING DATE: 2002-05-02
; PRIOR APPLICATION NUMBER: 09/648,520
; PRIOR FILING DATE: 2000-08-25
; NUMBER OF SEQ ID NOS: 51
; SOFTWARE: PatentIn Ver. 3.2
; SEQ ID NO 48
; LENGTH: 849
; TYPE: DNA
; ORGANISM: Ehrlichia chafeensis
US-10-138-162-48
```

```
Query Match 29.0%; Score 243.4; DB 22; Length 849;
Best Local Similarity 52.3%; Pred. No. 1.1e-42;
Matches 447; Conservative 77; Mismatches 307; Indels 24; Gaps 4;

Qy 1 ATGAATTATAAGAAAAATCTTAGTAAGAGCGCGGTAAATCTCATTAATGTCAATCTTACCA 60
Db 1 ATGAATTACAAAAAAGTTTTCATAACAAGTGCATTGTATATCAVTAATATCTTCTACCT 60

Qy 61 TATCAGTCTTTTGCAGATCTGTAGTTTCAAGACTAATGATAACAAGAGGCTTCTAC 120
Db 61 GGAGTATCATTTTCYGCACCCARCAGGTAGTGGTATTAAACGGYAAT-----TCTAY 111

Qy 121 ATTAGTCGAAGTACAATCCAAGTATATCACATTTAGAAAAATCTCTGCT---GAAGAA 177
Db 112 ATCAGTGGAAAAATAYATGCCAAGVCTTCGATTTTGGRTTYTCTGCTAAGGAAGAA 171

Qy 178 ACTCCTATTAAATGAAACAAATTTCTCTCACTAAAAAAAGTTTTCGGACTAAAGAAAGATGGT 237
Db 172 AGAARTACAACAGYTCGGAGTRTTTGGAYTGAAGCAARATTTGGGAYGGMAGYCAATAYCY 231

Qy 238 GATATACAAAAAAAGACGATTTTACAAGAGTAGTCCAGGCATTGATTTTCAAAATAC 297
Db 232 MACWCYHMYMSWRAHRMTVYATTYACTGTTCAAAAYTAYTCRTTTAAATATGAAAAAYAY 291

Qy 298 TTAATATCAGGATTTTCAGGAAGTATTGGTTACTCTATGACGCGACCAAGAAATAGAACTT 357
Db 292 CCRITTYTAGGWTTCGAGGAGCTATTGGYTACTCAATGATGGYCCAAAGATAGACCTT 351

Qy 358 GAAGCTGCATATCAACAAATTTAATCCAAAAACACCGGATAACATGATGATGATGATGATGAT 417
Db 352 GAAGTATCTTATGARACATTTYGATGTWAAAAATCAAGGTAACARYTAYAAAGAYGAAGCD 411
```

```
Qy 418 GAATACTATAAACATTTTTCATTATCTCTCTAAAGATGCA-----ATGGAAGATCAG 468
Db 412 CATAGRTATGTGCTYATCYCRTWASRSYWCARBARCARCATGWSKAGTGCARRTRAT 471
Qy 469 CAATATGTAGTACTTTAAAAATGACGGCATAAATTTTATGTCTCATTTGATGGTTAATACTTGC 528
Db 472 AMWTTTGTCTTCTAAATAAGAGRYTACTTTGACRTATCTRTTATGCTGAACGATGC 531
Qy 529 TATGACATTTACAGCTGAAGAGATATCTTTCGTACCATATGTCATGTCAGGTATAGGAGCA 588
Db 532 TATGAYGTARTARGYGAAGGMATACCTTTTCTCTCTTAYATATGYGAGGTATYGGKACT 591
Qy 589 GATCTTATCAGTATTTTAAAGACCTCAATCTAAAAATTTGCTTACCAAGGAAAAATAGGT 648
Db 592 GATTTAGTATCCATGTTTGAAGYTCAAAACCTTAAATTTCTTACCAGGAAAGTTAGGT 651
Qy 649 ATTAGTTACCTTATCACACAGAGTCTCTGCAATTTTATTTGGTGGATACCTACCATGGCGTT 708
Db 652 TTAAGCTACTCTATAAGCCAGAACCTCTGTSTTTTGTGGYGCAYTTCATAGGTR 711
Qy 709 ATTGGTAATAAATTTGAGAGATACCTGTAAATAAATCTCTGTAGTATTAATGATGCTCCT 768
Db 712 ATRGGRACGAATTVAGAGATATTCCTCTRTAAATACCTAVTGGATCAASWCTTGCAGGA 771
Qy 769 CAA---ACCACATCTGCTTCAGTAACTCTTGAGCTTGGATACCTTTGGCGGAGAAATTTGA 825
Db 772 AMAGGRAAYACCTCGCAATAGTAACTAGTAACTAGTAACTAGTAACTAGTAACTAGTAACTAGTAA 831
Qy 826 ATGAGGTTTCCACCTTC 840
Db 832 GGAAGRTTTGCTTC 846
```

Search completed: August 30, 2005, 14:59:58
Job time : 653 secs

GenCore version 5.1.6
Copyright (c) 1993 - 2005 CompuGen Ltd.

OM nucleic - nucleic search, using sw model

Run on: August 29, 2005, 18:04:14 ; Search time 1467 Seconds
(without alignments)
936.927 Million cell updates/sec

Title: US-10-680-349-41
Perfect score: 840
Sequence: 1 atgaattataagaataattct.....ttggaatgaggttcacattc 840

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 1.0

Searched: 1202784 seqs, 818138359 residues

Total number of hits satisfying chosen parameters: 2405568

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued Patents NA.*
1: /cgn2_6/ptodata/1/ina/5A_COMB.seq:*
2: /cgn2_6/ptodata/1/ina/5B_COMB.seq:*
3: /cgn2_6/ptodata/1/ina/6A_COMB.seq:*
4: /cgn2_6/ptodata/1/ina/6B_COMB.seq:*
5: /cgn2_6/ptodata/1/ina/PTUS_COMB.seq:*
6: /cgn2_6/ptodata/1/ina/backfiles.seq:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	840	100.0	840	3	US-09-660-587-41
2	840	100.0	840	4	US-09-811-007A-41
3	840	100.0	843	4	US-09-314-701-47
4	598.6	71.3	852	4	US-09-314-701-3
5	243.4	29.0	849	3	US-09-648-520E-48
6	238.4	28.4	924	4	US-09-314-701-35
7	238.4	28.4	1607	3	US-09-660-587-1
8	238.4	28.4	1607	3	US-09-261-358A-1
9	238.4	28.4	1607	3	US-09-648-520E-47
10	238.4	28.4	1607	3	US-09-201-458-1
11	238.4	28.4	1607	4	US-09-811-007A-1
12	234	27.9	840	3	US-09-660-587-5
13	234	27.9	840	3	US-09-261-358A-5
14	234	27.9	840	4	US-09-811-007A-5
15	232.4	27.7	843	4	US-09-314-701-37
16	232.4	27.7	846	4	US-09-314-701-1
17	228.6	27.2	830	3	US-08-953-326-11
18	228.6	27.2	830	4	US-09-553-662-11
19	228.6	27.2	830	4	US-10-062-994-11
20	217.4	25.9	867	4	US-09-314-701-31
21	212.8	25.3	861	3	US-08-953-326-8
22	212.8	25.3	861	4	US-09-314-701-7
23	212.8	25.3	861	4	US-09-553-662-8
24	212.8	25.3	861	4	US-10-062-994-8
25	207.2	24.7	843	3	US-08-953-326-10
26	207.2	24.7	843	4	US-09-314-701-11
27	207.2	24.7	843	4	US-09-553-662-10

28	207.2	24.7	843	4	US-10-062-994-10	Sequence 10, Appl
29	205	24.4	837	3	US-08-953-326-9	Sequence 9, Appl
30	205	24.4	837	4	US-09-314-701-9	Sequence 9, Appl
31	205	24.4	837	4	US-09-553-662-9	Sequence 9, Appl
32	205	24.4	837	4	US-10-062-994-9	Sequence 9, Appl
33	203.8	24.3	842	3	US-08-733-230-3	Sequence 3, Appl
34	203.8	24.3	842	3	US-08-953-326-3	Sequence 3, Appl
35	203.8	24.3	842	4	US-09-553-662-3	Sequence 3, Appl
36	203.8	24.3	842	4	US-10-062-994-3	Sequence 3, Appl
37	198.4	23.6	843	4	US-09-314-701-5	Sequence 5, Appl
38	195	23.2	828	3	US-09-660-587-43	Sequence 43, Appl
39	195	23.2	828	4	US-09-811-007A-43	Sequence 43, Appl
40	195	23.2	864	3	US-08-733-230-1	Sequence 1, Appl
41	195	23.2	864	3	US-08-953-326-1	Sequence 1, Appl
42	195	23.2	864	4	US-09-553-662-1	Sequence 1, Appl
43	195	23.2	864	4	US-10-062-994-1	Sequence 1, Appl
44	191.8	22.8	831	4	US-09-314-701-41	Sequence 41, Appl
45	185.4	22.1	840	4	US-09-314-701-23	Sequence 23, Appl

ALIGNMENTS

RESULT 1

US-09-660-587-41
; Sequence 41, Application US/09660587
; Patent No. 6392023
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/09/660,587
; CURRENT FILING DATE: 2000-09-12
; PRIOR APPLICATION NUMBER: 09/261,358
; PRIOR FILING DATE: 1999-03-03
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 41
; LENGTH: 840
; TYPE: DNA
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: nucleic acid sequence of E. canis p28-2
US-09-660-587-41

Query Match	100.0%;	Score 840;	DB 3;	Length 840;
Best Local Similarity	100.0%;	Pred. No. 1.1e-211;		
Matches	840;	Conservative	0;	Mismatches 0; Indels 0; Gaps 0;
Qy	1	ATGAATTATAGAAAAATTTCTAGTAAGAAGCGGTTAATCTCATTAAATGTCAATCTTACCA	60	
Db	1	ATGAATTATAGAAAAATTTCTAGTAAGAAGCGGTTAATCTCATTAAATGTCAATCTTACCA	60	
Qy	61	TATCAGTCTTTTTCGAGATCCTGTAGGTTCAAGAACTAATGATACAAAGAAGGCTTCTAC	120	
Db	61	TATCAGTCTTTTTCGAGATCCTGTAGGTTCAAGAACTAATGATACAAAGAAGGCTTCTAC	120	
Qy	121	ATTAGTCAAGTACAAATCCAAAGTATATACACTTTAGAAAAATTTCTCTGCTGAAGAACT	180	
Db	121	ATTAGTCAAGTACAAATCCAAAGTATATACACTTTAGAAAAATTTCTCTGCTGAAGAACT	180	
Qy	181	CTTATTAAATCGAACAATTTCTCTACATAAAGTTTTTCGAGCTTAAAGAAGATGGTAT	240	
Db	181	CTTATTAAATCGAACAATTTCTCTACATAAAGTTTTTCGAGCTTAAAGAAGATGGTAT	240	
Qy	241	ATAACAAAAAAGACGATTTTACAAGAGTAGCTCCAGGCAATGATTTTCAAAATAACTTA	300	
Db	241	ATAACAAAAAAGACGATTTTACAAGAGTAGCTCCAGGCAATGATTTTCAAAATAACTTA	300	
Qy	301	ATATCAGATTTTCAGGAAGTATTGGTTACTCTATGACCGGACCAAGATAGAACTTGAA	360	

Db 301 ATATCAGGATTTTTCAGGAAGTATTGGTTACTCTATGCGCGCAAGATAGAACTTGAA 360
QY 361 GCTGCAATCAACAAATTTAATCCAAAAACACCGATAACAATGATCTGATATGTTGAA 420
Db 361 GCTGCAATCAACAAATTTAATCCAAAAACACCGATAACAATGATCTGATATGTTGAA 420
QY 421 TACTATAAACAATTTTGCATTTATCTCGTAAAGATGCAATGCAAGATCAGCAATATGTAGTA 480
Db 421 TACTATAAACAATTTTGCATTTATCTCGTAAAGATGCAATGCAAGATCAGCAATATGTAGTA 480
QY 481 CTTAAAAATGACGGCATAAATCTTTTATGTCATTTGATGTTAATCTTGCTATGACATTACA 540
Db 481 CTTAAAAATGACGGCATAAATCTTTTATGTCATTTGATGTTAATCTTGCTATGACATTACA 540
QY 541 GCTGAAGGATGATCTTTTCGTAACCATATGTCATGTCAGGATAGGAGCAGATCTTATCACT 600
Db 541 GCTGAAGGATGATCTTTTCGTAACCATATGTCATGTCAGGATAGGAGCAGATCTTATCACT 600
QY 601 ATTTTAAAGACCTCAATCTAAAATTTGCTTACCAAGGAAAAATAGGTATTAGTTACCCCT 660
Db 601 ATTTTAAAGACCTCAATCTAAAATTTGCTTACCAAGGAAAAATAGGTATTAGTTACCCCT 660
QY 661 ATCACACCAAGATCTCTGCAATTTATTTGGTGGATACCAATGCGGTTATTTGGTAATAAA 720
Db 661 ATCACACCAAGATCTCTGCAATTTATTTGGTGGATACCAATGCGGTTATTTGGTAATAAA 720
QY 721 TTTGAGAGATACCTGTAATAAATCTCTGTAAGTATTAATGATGCTCTCAACCATCT 780
Db 721 TTTGAGAGATACCTGTAATAAATCTCTGTAAGTATTAATGATGCTCTCTCAACCATCT 780
QY 781 GCTTCAGTAATCTTGACGTTGGATACCTTTGGCGGAGAAATTTGGAATGAGGTTCACTTC 840
Db 781 GCTTCAGTAATCTTGACGTTGGATACCTTTGGCGGAGAAATTTGGAATGAGGTTCACTTC 840

RESULT 2

US-09-811-007A-41
; Sequence 41, Application US/09811007A
; Patent No. 6660269
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/09/811,007A
; CURRENT FILING DATE: 2001-10-23
; PRIOR APPLICATION NUMBER: 09/660,587
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 41
; LENGTH: 840
; TYPE: DNA
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: nucleic acid sequence of E. canis p28-2
US-09-811-007A-41

Query Match 100.0%; Score 840; DB 4; Length 840;
Best Local Similarity 100.0%; Pred. No. 1.1e-211;
Matches 840; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 ATGAATTTAAGAAATTTCTAGTAAGAGCGCGTTAATCTCATTAATGTCATCTTACCA 60
Db 1 ATGAATTTAAGAAATTTCTAGTAAGAGCGCGTTAATCTCATTAATGTCATCTTACCA 60
QY 61 TATCAGTCTTTTGCAGATCTCTGAGTTCAGAACTAATGATAACAAGAGGCTTCTAC 120
Db 61 TATCAGTCTTTTGCAGATCTCTGAGTTCAGAACTAATGATAACAAGAGGCTTCTAC 120
QY 121 ATTAGTCAAGATTAACAATCAAGTATATCACTTTAGAAAAATTTCTCTGCTGAAGAACT 180

Db 121 ATTAGTCAAGATTAACAATCAAGTATATCACACTTTAGAAAAATTTCTCTGCTGAAGAACT 180
QY 181 CCTATTAAATGGAAACAATTTCTCTCACTAAATAAGTTTTTCGGACTAAAGAAGATGGTAT 240
Db 181 CCTATTAAATGGAAACAATTTCTCTCACTAAATAAGTTTTTCGGACTAAAGAAGATGGTAT 240
QY 241 ATACAAAAAAGACGATTTTACAGAGTAGTCTCCAGGCAATGATTTTCAAAAAATAACTTA 300
Db 241 ATACAAAAAAGACGATTTTACAGAGTAGTCTCCAGGCAATGATTTTCAAAAAATAACTTA 300
QY 301 ATATCAGGATTTTCAGAAAGTATTTGTTACTCTATGCGCGCAACAAGATAGAACTTGAA 360
Db 301 ATATCAGGATTTTCAGAAAGTATTTGTTACTCTCTATGCGCGCAACAAGATAGAACTTGAA 360
QY 361 GCTGCAATCAACAATTTAATCCAAAAACACCGATAACAATGATCTGATATGTTGAA 420
Db 361 GCTGCAATCAACAATTTAATCCAAAAACACCGATAACAATGATCTGATATGTTGAA 420
QY 421 TACTATAAACAATTTTGCATTTATCTCGTAAAGATGCAATGCAAGATCAGCAATATGTAGTA 480
Db 421 TACTATAAACAATTTTGCATTTATCTCGTAAAGATGCAATGCAAGATCAGCAATATGTAGTA 480
QY 481 CTTAAAAATGACGGCATAAATCTTTTATGTCATTTGATGTTAATCTTGCTATGACATTACA 540
Db 481 CTTAAAAATGACGGCATAAATCTTTTATGTCATTTGATGTTAATCTTGCTATGACATTACA 540
QY 541 GCTGAAGGATGATCTTTTCGTAACCATATGTCATGTCAGGATAGGAGCAGATCTTATCACT 600
Db 541 GCTGAAGGATGATCTTTTCGTAACCATATGTCATGTCAGGATAGGAGCAGATCTTATCACT 600
QY 601 ATTTTAAAGACCTCAATCTAAAATTTGCTTACCAAGGAAAAATAGGTATTAGTTACCCCT 660
Db 601 ATTTTAAAGACCTCAATCTAAAATTTGCTTACCAAGGAAAAATAGGTATTAGTTACCCCT 660
QY 661 ATCACACCAAGATCTCTGCAATTTATTTGGTGGATACCAATGCGGTTATTTGGTAATAAA 720
Db 661 ATCACACCAAGATCTCTGCAATTTATTTGGTGGATACCAATGCGGTTATTTGGTAATAAA 720
QY 721 TTTGAGAGATACCTGTAATAAATCTCTGTAAGTATTAATGATGCTCTCAACCATCT 780
Db 721 TTTGAGAGATACCTGTAATAAATCTCTGTAAGTATTAATGATGCTCTCTCAACCATCT 780
QY 781 GCTTCAGTAATCTTGACGTTGGATACCTTTGGCGGAGAAATTTGGAATGAGGTTCACTTC 840
Db 781 GCTTCAGTAATCTTGACGTTGGATACCTTTGGCGGAGAAATTTGGAATGAGGTTCACTTC 840

RESULT 3

US-09-314-701-47
; Sequence 47, Application US/09314701
; Patent No. 6544517
; GENERAL INFORMATION:
; APPLICANT: Rikihisa, Yasuko
; APPLICANT: Ohasi, No. 6544517io
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia
; TITLE OF INVENTION: Chaffensis
; FILE REFERENCE: 22727/04021
; CURRENT APPLICATION NUMBER: US/09/314,701
; CURRENT FILING DATE: 1999-05-19
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 47
; LENGTH: 843
; TYPE: DNA
; ORGANISM: Ehrlichia canis
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(843)
US-09-314-701-47

Query Match 100.0%; Score 840; DB 4; Length 843;
Best Local Similarity 100.0%; Pred. No. 1.1e-211;
Matches 840; Conservative 0; Mismatches 0; Indels 0; Gaps 0;


```
QY 1 ATGAATTATAGAAAAATTTCTAGTAAGAAAGCGGTTAATCTCAATTAATGTCAATCTTACCA 60
Db |||
QY 1 ATGAATTATAGAAAAATTTCTAGTAAGAAAGCGGTTAATCTCAATTAATGTCAATCTTACCA 60
Db |||
QY 61 TATCAGTCTTTTGCAGATCCTGTAGTTCAAGAACTAATGATAACAAGAAAGGCTTCTAC 120
Db |||
QY 61 TATCAGTCTTTTGCAGATCCTGTAGTTCAAGAACTAATGATAACAAGAAAGGCTTCTAC 120
Db |||
QY 121 ATTAGTCAAAAGTCAATCCCAAGTATATACACATTTTAGAAAAATTTCTCTGTGAAAGAACT 180
Db |||
QY 121 ATTAGTCAAAAGTCAATCCCAAGTATATACACATTTTAGAAAAATTTCTCTGTGAAAGAACT 180
Db |||
QY 181 CCTATTATGAAACAAATTTCTCACTHAAAAAGTTTTCGGACTAAAGAAAGTGGTAT 240
Db |||
QY 181 CCTATTATGAAACAAATTTCTCACTHAAAAAGTTTTCGGACTAAAGAAAGTGGTAT 240
Db |||
QY 241 ATACAAAAAAGAGCATTTTACAGAGTACCTCCAGCATTTGATTTTCAAAATAACTTA 300
Db |||
QY 241 ATACAAAAAAGAGCATTTTACAGAGTACCTCCAGCATTTGATTTTCAAAATAACTTA 300
Db |||
QY 301 ATATCAGGATTTTCAGGAAGTATTTGGTTACTCTATGGACGGACCAAGATAGAACTTGAA 360
Db |||
QY 301 ATATCAGGATTTTCAGGAAGTATTTGGTTACTCTATGGACGGACCAAGATAGAACTTGAA 360
Db |||
QY 361 GCTGATATCAAACTTTAATTCBAAAAACACCGATACCAATGATCTGATAATGTTGAA 420
Db |||
QY 361 GCTGATATCAAACTTTAATTCBAAAAACACCGATACCAATGATCTGATAATGTTGAA 420
Db |||
QY 421 TACTATAAACATTTTGCATTTATCTGTAAGATCAATGGAGATCAGCAATATGTAGTA 480
Db |||
QY 421 TACTATAAACATTTTGCATTTATCTGTAAGATCAATGGAGATCAGCAATATGTAGTA 480
Db |||
QY 481 CTTAAAAATGACGGATAACTTTTATGTCTATGTTGTTAATCTTGTCTATGACATTA 540
Db |||
QY 481 CTTAAAAATGACGGATAACTTTTATGTCTATGTTGTTAATCTTGTCTATGACATTA 540
Db |||
QY 541 GCTGAAGAGTATCTTTCGTACCATATGTCATGTCAGGATAGAGCAGATCTTATCACT 600
Db |||
QY 541 GCTGAAGAGTATCTTTCGTACCATATGTCATGTCAGGATAGAGCAGATCTTATCACT 600
Db |||
QY 601 ATTTTAAAGACCTCAATCTAAATTTTCTTACCAAGGAAATAGCTATGTTACCT 660
Db |||
QY 601 ATTTTAAAGACCTCAATCTAAATTTTCTTACCAAGGAAATAGCTATGTTACCT 660
Db |||
QY 661 ATCACACAGAGTCTCTGCAATTTATTTGGTGATACCTACCATGGGTTATGGTAAATAA 720
Db |||
QY 661 ATCACACAGAGTCTCTGCAATTTATTTGGTGATACCTACCATGGGTTATGGTAAATAA 720
Db |||
QY 721 TTTGAGAAAGATACCTGTAAATCACTCTGTAGTATTAATGATGCTCTCAAAACCATCT 780
Db |||
QY 721 TTTGAGAAAGATACCTGTAAATCACTCTGTAGTATTAATGATGCTCTCAAAACCATCT 780
Db |||
QY 781 GCTTCAGTAACTCTTGAGTTGGATCTTTGGCGGAGAAATGGAAATGAGGTTACCTTC 840
Db |||
QY 781 GCTTCAGTAACTCTTGAGTTGGATCTTTGGCGGAGAAATGGAAATGAGGTTACCTTC 840
Db |||
```

RESULT 4

```
US-09-314-701-3
; Sequence 3, Application US/09314701
; Patent No. 6544517
; GENERAL INFORMATION:
; APPLICANT: Rikihisa, Yasuko
; APPLICANT: Ohasi, No. 6544517io
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia
; TITLE OF INVENTION: Chaffeensis
; FILE REFERENCE: 22727/04021
; CURRENT APPLICATION NUMBER: US/09/314.701
; CURRENT FILING DATE: 1999-05-19
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 3
```

```
; LENGTH: 852
; TYPE: DNA
; ORGANISM: Ehrlichia chaffeensis
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(852)
US-09-314-701-3
```

```
Query Match 71.3%; Score 598.6; DB 4; Length 852;
Best Local Similarity 82.6%; Pred. No. 4.6e-148;
Matches 701; Conservative 0; Mismatches 139; Indels 9; Gaps 1;
```

```
QY 1 ATGAATTATAGAAAAATTTCTAGTAAGAAAGCGGTTAATCTCAATTAATGTCAATCTTACCA 60
Db |||
QY 1 ATGAATTATAGAAAAATTTTGTGAAGCAGTGCATTAATTTTCAATTAATGTCAATCTTACCT 60
Db |||
QY 61 TATCAGTCTTTTTCAGATCCTGTAGTTCAA-----GAACATATGATAACAGAA 111
Db |||
QY 61 TACCAATCTTTTGCAGATCCTGTAACTTCAATGATACAGGAATCAACGACAGAGAA 120
Db |||
QY 112 GGCTTCTACATTAAGTGCAAAAGTACAATCCAAAGTATATCACACTTTTAGAAAAATTTCTCTGCT 171
Db |||
QY 121 GGCTTCTACATTAAGTGCAAAAGTACAATCCAAAGTATATCACACTTTCAGAAATTTCTCAGCT 180
Db |||
QY 172 GAAGAAACTCTCTATTAATGGAACAAATTTCTCACTAAAAAGTTTTCGAGACTAAAGAAA 231
Db |||
QY 181 GAAGAAAGTCCCATCAATGGAATACTTCTATCACTAAAAAGTTTTCGGGCTGAAAAA 240
Db |||
QY 232 GATGGTGATATACAAAAAAGACGATTTTACAAGAGTAGCTCCAGGCAATGATTTTCAA 291
Db |||
QY 241 GACGGAGATATACCAATCTGGGAATTTTAAACGACAGATCCAGCCTTCGAGTTTCAG 300
Db |||
QY 292 AATAACTTAATATCAGGATTTTTCAGGAAGTATTTGGTTACTCTATGGAACGACCAAGAA 351
Db |||
QY 301 AATAACTTAATATCAGGATTTTTCAGGAAGTATTTGGTTACTCTATGGAACGACCAAGAA 360
Db |||
QY 352 GAACATTGAAGTGCATATCAACAAATTTAATTCBAAAAACACCGATACCAATGATCTGAT 411
Db |||
QY 361 GAACATTGAAGTGCATATCAACAAATTTAATTCBAAAAACACCGATACCAATGATCTGAT 420
Db |||
QY 412 AATGGTGAATACATATAACAAATTTTGGATATCTCGTAAAGATCAATGGAAGATCAGCA 471
Db |||
QY 421 AGCGTGATCTATATAATTAATTTTGGACTATCTCGTGAAGACGCAATAGCAGATAAGAA 480
Db |||
QY 472 TATGTAGTACTTAAAAATGACGGCATAAATTTTATGTCAATTTGATGGTTAATACTTGTCTAT 531
Db |||
QY 481 TATGTGTCTTAAATGAAGGCACTCACTTTTATGTCAATTTGATGGTTAATACTTGTCTAT 540
Db |||
QY 532 GACATTACAGCTGAAGAGATCTTTTCGTACCATATGCAATGCAATGTCAGGTATAGAGCAGAT 591
Db |||
QY 541 GACATTACAGCTGAAGAGATCACTTTTATACACCGTATGCAATGTCAGGTATAGAGCAGAC 600
Db |||
QY 592 CTTATCACTATTTTAAAGACCTCAATCTAAATTTTGTCTTACCAGGAAAAATAGGTATT 651
Db |||
QY 601 CTTATCACTATTTTAAAGATTTTAAATTTTAAATTTTAAATTTTAAATTTTAAATTTTAA 660
Db |||
QY 652 AGTTACCTCTATCACACAGAGTCTCTGCAATTTTATTTGGTGATATACCACTAGGCTTATT 711
Db |||
QY 661 AGCTATCCAATCACACAGAGTTTCCGCTTTTATTTGGAGGATACCTACACGAGGTTATA 720
Db |||
QY 712 GGTAAATAATTTGAGAGATACCTGTAAATCAATCTCTGTGTAGTATTAATGATGCTCTCAA 771
Db |||
QY 721 GGAATAAATTTTAAACAAATACCTGTAAATAACACCTGTAGTATTTAGAAAGAGCTCTCAA 780
Db |||
QY 772 ACCACATCTGCTTCAGTAACTTTGAGTTGGATCTTTGGCGGAGAAATTTGGAATGAGG 831
Db |||
QY 781 ACAACATCTCGCTAGTAGTAATTTGACATGGGATCTTTTGGCGGAGAAATTTGGAGTAAG 840
Db |||
QY 832 TTCACCTTC 840
Db |||
QY 841 TTCACCTTC 849
Db |||
```

```
RESULT 5
US-09-648-520E-48
; Sequence 48, Application US/09648520E
; Patent No. 6432649
; GENERAL INFORMATION:
; APPLICANT: Stich, Roger W.
; APPLICANT: Rikihisa, Yasuko
; TITLE OF INVENTION: Methods for Detecting Ehrlichia Canis and Ehrlichia Chaffeensis in Vertebrate and Invertebrate Hosts
; FILE REFERENCE: 22727/04069
; CURRENT APPLICATION NUMBER: US/09/648,520E
; CURRENT FILING DATE: 2000-08-25
; NUMBER OF SEQ ID NOS: 51
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 48
; LENGTH: 849
; TYPE: DNA
; ORGANISM: ORF sequence, Ehrlichia chaffeensis p28
US-09-648-520E-48

Query Match      29.08; Score 243.4; DB 3; Length 849;
Best Local Similarity 52.3%; Pred. No. 1.9e-54;
Matches 447; Conservative 77; Mismatches 307; Indels 24; Gaps 4;

QY 1 ATGAATTATAGAAAAATCTAGTAAGAGCGCGTTAATCTCATTAAATGTCAATCTTACCA 60
DB 1 ATGAATTACAAAAGATTTTCATPAACAGTGCATTGATATCAATATCAATCTTCTACCT 60
QY 61 TATCAGTCTTTTGCAGATCTCTGATGTTCAAGAACTAATGATACAAAGAGCTTCTAC 120
DB 61 GGAGTATCATTTTCYGACCCARCAGGAGTGGTATTAAACGGYAAT-----TCTAY 111
QY 121 ATTAGTCAAGATACATCCAGGTATATACACTTTTAGAAAATCTCTGCT---GAAGA 177
DB 112 ATCAGTGGAAAATAYATGCCAAGGCTTCGCAATTTTGGRTTCTGCTAAGGAAGA 171
QY 178 ACTCCTATTATAGGAACAAATTTCTCACTAAAGAAAGTTTTCGGAGCTAAAGAAAGATGGT 237
DB 172 AGAARTACAACAGYTGAGTGTGGGAYTGAACGAATTTGGGAYGGMAGYCAATAYCY 231
QY 238 GATATAACAAAAGAACGATTTTACAAGAGTAGCTCCAGCAATTTGATTTTCAAAAATPAC 297
DB 232 MACWCYHMYMSWRAHRMTVVATYVACTGTCTCAAAATAYTCRTTTAAATATGAAAAYAY 291
QY 298 TTAATATCAGATTTTTCAGGAAGTATGTTTCTACTATGACGACCAAGAAATAGACTT 357
DB 292 CCTTTTATGGWTTTTCAGGAGCTATTTGGTACTCAATGGATGGYCAAGAAATAGACTT 351
QY 358 GAAGCTGCATATCAACAAATTTAATCCAAAAACACCGATACCAATGATGATAATGGT 417
DB 352 GAAGTATCTTATGARACATTYATGATGAWAAAATCAAGTAAACARYTAYAGAAAGACD 411
QY 418 GAATACATATAACATTTTGGCAATATCTCGTAAAGATGCA-----ATGGAAGATCAG 468
DB 412 CATAGRTAYTGTGCTYATCYCRTMASRSYWCARBACARRCATGWSKAGTGCARRTRAT 471
QY 469 CAATATCTAGTACTTAAATATGACGGCATAACTTTTATGTTCATTGATGTTAATATCTGC 528
DB 472 AMWTTTGYTTTCTAAAAAATGAAGRYTACTTGACRTATCRITYATGCTGGAACGATGC 531
QY 529 TATGACATTTACAGCTGAAGGATATCTTTGATACCATATGATGATGATGATGATGATGATG 588
DB 532 TATGAYGTARTARGYGAAGGNATACCTTTTCTCTCTTAYATATGYGAGTATYGGKACT 591
QY 589 GATCTTATCTACTATTTTAAAGACCTCAATCTAAAATTTGCTTACCAAGGAAAATAGGT 648
DB 592 GATTAGTATCTCATGTTTGAAGYTACAAYCCCTAAAAATTTCTTACCAAGGAAAATAGGT 651
QY 649 ATTAGTTTACCTTATCACACAGAGTCTCTGCAATTTTATGCTGATACCTACCTACCTG 708
DB 652 TTAAGCTACTCTATPAAGCCAGAACTCTCTGTTTTRTYGGYGRCAITTYCATAGGTR 711
QY 709 ATTGGTAAATAATTTGAGAAGATACCTGTAAATACCTCCTGTAGTATTAAATGATGCTCCT 768
```

```
Db 712 ATRGGRACGAATTYAGAGATATCTCTCTRTAATACCTAVTGTGATCAASWCTTGCAGGA 771
QY 769 CAA---ACCACATCTGCTTCAGTAACCTCTTGAGCTTGGATACTTTGGCGGAGAAATGGA 825
Db 772 AMAGGRAAYYACCCCTGCAATAGTAAYACTRGAYGTATGCCACTTTTGGWATAGARCTTGA 831
QY 826 ATGAGGTTCCACCTTC 840
Db 832 GGAAGRTTTGCTTTC 846

RESULT 6
US-09-314-701-35
; Sequence 35, Application US/09314701
; Patent No. 6544517
; GENERAL INFORMATION:
; APPLICANT: Rikihisa, Yasuko
; APPLICANT: Ohasi, No. 6544517io
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia
; TITLE OF INVENTION: Chaffeensis
; FILE REFERENCE: 22727/04021
; CURRENT APPLICATION NUMBER: US/09/314,701
; CURRENT FILING DATE: 1999-05-19
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 35
; LENGTH: 924
; TYPE: DNA
; ORGANISM: Ehrlichia canis
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(924)
US-09-314-701-35

Query Match      28.4%; Score 238.4; DB 4; Length 924;
Best Local Similarity 57.7%; Pred. No. 4e-53;
Matches 486; Conservative 0; Mismatches 346; Indels 10; Gaps 3;

QY 1 ATGAATTATAGAAAATTTCTAGTAAGAGCGGTTAATCTCATTAATGTCAATCTTACCA 60
DB 88 ATGAATTGCAAAAAAATTTCTTATAACAATGCAATTAATATCATTAATGACTCTATFCCA 147
QY 61 TATCAGTCTTTTGCAGATCTCTGAGGTTCAAGAACTAATGATAACAAAGAGGCTTCTAC 120
DB 148 AGCATATCTTTTCTGATACTATACAAGTGGTAACTGGTGGTAA-----CTTCTAT 201
QY 121 ATTAGTGAAGATPACAATCAAAGTATATCACACTTTTAGAAAATTTCTGCTGAAGA--AA 178
DB 202 ATTAGTGAAGATATGTACCAAGTGTCTCACATTTTGGTAGCTTCTCAGCTAAAGAAGA 261
QY 179 CTCCTATTAAATGGAACAAATTTCTCACTAAAAAGTTTTCGAGCTAAAGAAAGATGGTG 238
DB 262 AGCAATCAACTGTTGGAGTTTTTGGATTTAAACATGATGGGATGGAAGTCCAATCT - 320
QY 239 ATATAACAAAAAAGACGATTTTACAAGAGTAGCTCCAGGCAATGATTTTCAAAAATACT 298
DB 321 -TAAGATATAACACGCTGACTTTACTGTTCCAAACTATTTCGTTACAGTACGACAATC 379
QY 299 TAATATCAGATTTTTCAGGAAGTATTTGGTTACTCTATGAGACGGACCAAGAAATAGAACTTG 358
DB 380 CATTTCTAGGGTTTTCAGGAGCTATCGGTTACTCAATGGGTGGCCCAAGAAATAGAAATTCG 439
QY 359 AGCTCATATCAACAAATTTAATCCAAAAACACCGATACCAATGATGATGATAATGGTG 418
DB 440 AATATCTTATGAAGCAITTCGACGTAAAAAGTCTTAATATCAATTTCAAAAATGACCGCG 499
QY 419 AATACATATAAACATTTTGCATTTATCTCGTAAAGATGCAATGGAAGATCAGCAATATGTAG 478
DB 500 ACAGGTACTCGGCTCTATCTCATCACATCGCAGCCTGGAAGCTGATAAATTTGTCT 559
QY 479 TACTTAAAAATGACGGCAATACTTTTATGTCATGATGGTTAATATCTTGTATGACATTA 538
```

Db 560 TCTTAAAAACGAGGGTTAATTGACATATCACTTGGCAATAAATGCATGTTATGATATAA 619
Qy 539 CAGCTGAAGAGTATCTTTTCGACCATATGCATGTCAGGATATAGGACAGATCTTATCA 598
Db 620 TAAATGACAAAGTACTGTTCTCCTTATATATGCGCAGGTATTGGTACTGATTGATTT 679
Qy 599 CTATTTTAAAGACCTCAATCTTAAATTTGCTTACCAAGGAAATATAGTATTAGTTACC 658
Db 680 CTATGTTTGAAGCTCAAGTCTTAAATTTCTCAACAAAGGAAATCTGGGCATTAGTTACT 739
Qy 659 CTATCACACCAAGTCTCTGCAATTTATTTGTTGATATCACTACATGCGCTTATTTGTAATA 718
Db 740 CTATTAATCCGGAACCTCTGTTTTCATCGGTGGCAATTTCCACAGGATCATAGGTAATG 799
Qy 719 AATTGAGAAGATCACTGTATTAATCTCTGTAGTATTAATGATGCTCCTCAAACCAAT 778
Db 800 AGTTTAGAGATATTCCTGCAATAGTACCTAGTAACTCAACTACAAATAGTGGACCAAT 859
Qy 779 CTGCTTCAGTAACTCTTACGCTTGGATATCTTTGGCGGAGAAATTCGAATGAGGTTCACT 838
Db 860 TTGCACAGTAACTAAATGTGTGCTCACTTTGGTTTGAACCTTGGAGGAAGATTAACT 919
Qy 839 TC 840
Db 920 TC 921

RESULT 7
US-09-660-587-1
; Sequence 1, Application US/09660587
; Patent No. 6392023
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/09/660,587
; PRIOR FILING DATE: 2000-09-12
; PRIOR APPLICATION NUMBER: 09/261,358
; PRIOR FILING DATE: 1999-03-03
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 1
; LENGTH: 1607
; TYPE: DNA
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: nucleic acid sequence of E. canis p28-7
US-09-660-587-1

Query Match 28.4%; Score 238.4; DB 3; Length 1607;
Best Local Similarity 57.7%; Pred. No. 4.9e-53;
Matches 486; Conservative 0; Mismatches 346; Indels 10; Gaps 3;

Qy 1 ATGAATTATAGAAATTTCTAGTAAAGCGCGTTAATCTCATTAATGTCAATCTTACCA 60
Db 146 ATGAATTCGAAAAATTTCTTATAACAACTGCAATTAATCAATTAATGTTACTCTATTCCA 205
Qy 61 TATCAGTCTTTTGCAGATCTCTGAGTTTCAGAACTAATGATATAACAAAGAGGCTTCTAC 120
Db 206 AGCATATCTTTTCTGTACTATATCAAGATGTAACATGGGTGGTAA-----CTTCTAT 259
Qy 121 ATTAGTCAAAAGTACAAATCCCAAGTATATCACACTTTAGAAAAATCTCTGTCTGAAGA-AA 178
Db 260 ATTAGTGAAGATGATGACCAAGTCTCTCAATTTTGGTACTTCTCAGCTTAAGAAGAA 319
Qy 179 CTCCTATTAAATGGAACAAATTTCTCTCACTAAAAAGTTTTCGGACTAAAGAAAGATGGT 238
Db 320 AGCAATCAACTGTTGGAGTTTTTGGATTAAAAACATGATTGGGATGGAAGTCCAATACT- 378
Qy 239 ATATAACAAAAAGACGAATTTTACAGAGATGATCTCCAGGCAATGATTTTCAAAATTAAT 298

Db 379 -TAAGATAAACAACGCTGACTTTTACTCTTCCAAACTATTCGTTCAGATACGAGAACATC 437
Qy 299 TAATATCAGGATTTTTCAGGAAGTATTGGTTACTCTATGGACGGACCAAGATAGAACTTG 358
Db 438 CATTTCTAGGGTTTTCGAGGAGCTATCGTTACTCAATGGGTGGCCCAAGATAGAAATCG 497
Qy 359 AAGCTGATATCAACAATTTAATCCAAAAACACCGATATAAATGATGATCTGATTAATGGT 418
Db 498 AAATATCTTATGAAGCATTCGACGTAAAAAGTCTCTAATATCAATATATCAAAATGACGCG 557
Qy 419 AATACTATAAACAATTTTTCATTTCTCGTAAAGATGCAATGGAAGATCAGCAATATGTAG 478
Db 558 ACAGTACTGGCTCTATCTCATCACATCGGACGATGGAAGCTGATAAATTTGTTCT 617
Qy 479 TACTTAAAAATGACGGCATAACTTTTATGTCATTTGATGTTAAATCTTGTCTATGACATTA 538
Db 618 TCTTAAAAACGGAAGGGTTAATTGACATATCACTTGCATAAATGCAATGTTATGATATAA 677
Qy 539 CAGCTGAAGAGTATCTTTCGTACCATATGATGTCAGGATATAGGAGCAGATCTTATCA 598
Db 678 TAAATGACAAGTACCTGTTTCTCTTATATATGCGCAGGTTATTTGGTACTGATTTGATTT 737
Qy 599 CTATTTTAAAGACCTCAATCTAAATTTTCTTACCAAGGAAAAATAGTATTAGTTACC 658
Db 738 CTATGTTTGAAGCTACAAGTCTTAAATTTCTTACCAGGAAAACTGGGCATTAGTTACT 797
Qy 659 CTATCACACCAAGTCTCTGCAATTTATTTGTTGATCTACTACCATGGCGTTTATTTGTAATA 718
Db 798 CTATTAATCCGGAACCTCTGTTTTCATCGTGGGCATTTCCACAGGATCATAGGTAATG 857
Qy 719 AATTGAGAAGATCACTGTATTAATCTCTGTAGTATTAATGATGCTCCTCAAACCAAT 778
Db 858 AGTTTAGAGATATTCCTGCAATAGTACTAGTAACTCAACTACAAATAGTGGACCAAT 917
Qy 779 CTGCTTCAGTAACTCTTACGCTTGGATCTTTCGCGGAGAAATTTGGAATGAGGTTCACT 838
Db 918 TTGCAACAGTAACTAAATGTGTGTTGTTTGGTCTTGTAGAACTTTGGAGGAAGATTAACT 977
Qy 839 TC 840
Db 978 TC 979

RESULT 8
US-09-261-358A-1
; Sequence 1, Application US/09261358A
; Patent No. 6403780
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP
; CURRENT APPLICATION NUMBER: US/09/261,358A
; PRIOR FILING DATE: 1999-03-03
; PRIOR APPLICATION NUMBER: 09/201,458
; PRIOR FILING DATE: 1998-11-30
; NUMBER OF SEQ ID NOS: 33
; SEQ ID NO 1
; LENGTH: 1607
; TYPE: DNA
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: nucleic acid sequence of ECa28-1
US-09-261-358A-1

Query Match 28.4%; Score 238.4; DB 3; Length 1607;
Best Local Similarity 57.7%; Pred. No. 4.9e-53;
Matches 486; Conservative 0; Mismatches 346; Indels 10; Gaps 3;

Qy 1 ATGAATTATAGAAAAATTTCTAGTAAAGCGCGTTAATCTCATTAATGTCAATCTTACCA 60

Db 146 ATGAATGCAAAAAAATTTCTATAACAACATGCAATTAATATATCAATTAATGTACTCTATTCCA 205
Qy 61 TATCAGTCTTTTCAGATCCGTAGGTTCAAGAACTAATGATAACAAAGAGCGCTTCTAC 120
Db 206 AGCATATCTTTTCTGTATCTATATACAAGATGGTAACATGGGTGGTAA-----CTTCTAT 259
Qy 121 ATTAGTGCAGAAATGCAATCCAAAGTATATCACACTTTTAGAAAAATTTCTCTGCTGAAGA--AA 178
Db 260 ATTAGTGGAAAGTATGTACCAAGTGTCTCACATTTTGGTAGCTTCTCAGCTAAGAAGAA 319
Qy 179 CTCCTATTAAATGGAACAAATTTCTCTACTAAAAAGTTTTCGGAATGATAAGAAAGATGGT 238
Db 320 AGCAATCAACTGTGGAGTTTTTGGGATTAACAACATGATGGGATGGAAGTCCAATACT- 378
Qy 239 ATATAACAAGAGAGAGATTTTACAGAGTAGTCCAGGCAATGATTTTCAAAAATAACT 298
Db 379 -TAAGAATAAACACGCTGACTTTTCTGTTCCAAACTATTCGTTACAGATACGAGAAACAATC 437
Qy 299 TAATATCAGGATTTTTCAGGAAGTATTTGGTTACTCTATGGACGGACCAAGAAATAGAACTTG 358
Db 438 CATTTCTAGGGTTTGCAGGAGCTATCGTTACTCAATGGGTGGCCCAAGAAATAGAACTTCG 497
Qy 359 AAGCTGATATCAACAATTTAAATCCAAAAACACCGATAACAATGATGATGATAATGGTG 418
Db 498 AAATATCTTATGAAGCATTCGACGTAAAAAGTCTTAATATCAATTTATCAAAAATGACGCGC 557
Qy 419 AATACTATAACATTTTGCATTATCTCGTAAAGATGCAATGGAAGATCACAATATGTAG 478
Db 558 ACAGGTACTCGCTCTATCTCATCACATCGGCAGCCATGGGAAGCTGATAAATTTGTCT 617
Qy 479 TACTTAAAAATGACGGCATAAATTTTATGTCATTGATGGTTAAATCTGCTATGACATTA 538
Db 618 TCTTAAAAAACGAAGGGTTAATTGACATATCACTTGCATTAATGCAATGTTATGATATAA 677
Qy 539 CAGCTGAAGAGTATCTTTTCGTACCATATGATGTCAGGTATAGGAGCAGATCTTATCA 598
Db 678 TAAATGACAAAGTACCTGTTTCTCTTATATATGCGCAGGTATTTGGTACTGATTTGATTT 737
Qy 599 CTATTTTAAAGACCTCAATCTAAAAATTTGCTTACCAAGGAAAAATAGGTATTAGTTACC 658
Db 738 CTATGTTGAAGCTACAAAGTCTTAAAAATTTCTTACCAAGGAAAACTGGGCATTTAGTTACT 797
Qy 659 CTATCACACAGAGTCTCTGCAATTTATGTTGGTGGATATCTACCATGGCGTTATTGGTAATA 718
Db 798 CTATTAATCCGGAACCTCTGTTTTCATCGTGGGCATTTCCACAGGATCATAGGTAATG 857
Qy 719 AATTGAGAGATACCTGTATAAATCTCTGTAGTATTAATGATGCTCCCTCAAAACCAAT 778
Db 858 AGTTTAGAGATATTCTGTCAATAGTACCTAGTAACTCAACTACAAATAGTGGACCAAT 917
Qy 779 CTGCTTCAGTAACCTTTGACGTTGGATACCTTGGCGGAGAAATGGAAATGAGGTTCACT 838
Db 918 TTGCAACAGTAACACTAAATGTGTGTCACCTTTGGTTTGAAGCTTGGAGGAAGATTTAACT 977
839 TC 840
978 TC 979

RESULT 9

US-09-648-520E-47
; Sequence 47, Application US/09648520E
; Patent No. 6432649
; GENERAL INFORMATION:
; APPLICANT: Stich, Roger W.
; APPLICANT: Rikihisa, Yasuko
; TITLE OF INVENTION: Methods for Detecting Ehrlichia Canis and Ehrlichia Chaffeensis in
; TITLE OF INVENTION: Vertebrate and Invertebrate Hosts
; FILE REFERENCE: 2272/04069
; CURRENT APPLICATION NUMBER: US/09/648,520E
; CURRENT FILING DATE: 2000-08-25
; NUMBER OF SEQ ID NOS: 51
; SOFTWARE: PatentIn version 3.1

; SEQ ID NO 47
; LENGTH: 1607
; TYPE: DNA
; ORGANISM: JAKE strain, Ehrlichia canis p30
US-09-648-520E-47

Query Match 28.4%; Score 238.4; DB 3; Length 1607;

Best Local Similarity 57.7%; Pred. No. 4.9e-53;

Matches 486; Conservative 0; Mismatches 346; Indels 10; Gaps 3;

Qy 1 ATGAATTAAGAAAAATTTCTAGTAAGAGCGGTTAATCTCATTAATGTCAATCTTACCA 60

Db 146 ATGAATGCAAAAAAATTTCTTATAACAACATGCAATTAATATCAATTAATGTACTCTATTCCA 205

Qy 61 TATCAGTCTTTTGCAGATCCTGTAGGTTCAAGAACTAATGATAACAAGAGCGCTTCTAC 120

Db 206 AGCATATCTTTTCTGTATCTATACAAGATGGTAAACATGGGTGGTAA-----CTTCTAT 259

Qy 121 ATTAGTGCAGAAATGCAATCCAAAGTATATCACACTTTTAGAAAAATTTCTCTGCTGAAGA--AA 178

Db 260 ATTAGTGGAAAGTATGTACCAAGTGTCTCACATTTTGGTAGCTTCTCAGCTAAGAAGAA 319

Qy 179 CTCCTATTAAATGGAACAAATTTCTCTCACTAAAAAGTTTTCGGAATGATAAGAAAGATGGTG 238

Db 320 AGCAATCAACTGTGGAGTTTTTGGGATTAACAACATGATGGGATGGAAGTCCAATACT- 378

Qy 239 ATATAACAAGAGAGAGATTTTACAGAGTAGTCCAGGCAATGATTTTCAAAAATAACT 298

Db 379 -TAAGAATAAACACGCTGACTTTTCTGTTCCAAACTATTCGTTACAGATACGAGAAACAATC 437

Qy 299 TAATATCAGGATTTTTCAGGAAGTATTTGGTTACTCTATGGACGGACCAAGAAATAGAACTTG 358

Db 438 CATTTCTAGGGTTTGCAGGAGCTATCGTTACTCAATGGGTGGCCCAAGAAATAGAACTTCG 497

Qy 359 AAGCTGATATCAACAATTTAAATCCAAAAACACCGATAACAATGATGATAATGGTG 418

Db 498 AAATATCTTATGAAGCATTCGACGTAAAAAGTCTTAATATCAATTTATCAAAAATGACGCGC 557

Qy 419 AATACTATAACATTTTGCATTATCTCGTAAAGATGCAATGGAAGATCACAATATGTAG 478

Db 558 ACAGGTACTCGCTCTATCTCATCACATCGGCAGCCATGGGAAGCTGATAAATTTGTCT 617

Qy 479 TACTTAAAAATGACGGCATAAATTTTATGTCATTGATGGTTAAATCTGCTATGACATTA 538

Db 618 TCTTAAAAAACGAAGGGTTAATTGACATATCACTTGCATTAATGCAATGTTATGATATAA 677

Qy 539 CAGCTGAAGAGTATCTTTTCGTACCATATGATGTCAGGTATAGGAGCAGATCTTATCA 598

Db 678 TAAATGACAAAGTACCTGTTTCTCTTATATATGCGCAGGTATTTGGTACTGATTTGATTT 737

Qy 599 CTATTTTAAAGACCTCAATCTAAAAATTTGCTTACCAAGGAAAAATAGGTATTAGTTACC 658

Db 738 CTATGTTGAAGCTACAAAGTCTTAAAAATTTCTTACCAAGGAAAACTGGGCATTTAGTTACT 797

Qy 659 CTATCACACAGAGTCTCTGCAATTTATGTTGGTGGATATCTACCATGGCGTTATTGGTAATA 718

Db 798 CTATTAATCCGGAACCTCTGTTTTCATCGTGGGCATTTCCACAGGATCATAGGTAATG 857

Qy 719 AATTGAGAGATACCTGTATAAATCTCTGTAGTATTAATGATGCTCCCTCAAAACCAAT 778

Db 858 AGTTTAGAGATATTCTGTCAATAGTACCTAGTAACTCAACTACAAATAGTGGACCAAT 917

Qy 779 CTGCTTCAGTAACCTTTGACGTTGGATACCTTGGCGGAGAAATGGAAATGAGGTTCACT 838

Db 918 TTGCAACAGTAACACTAAATGTGTGTCACCTTTGGTTTGAAGCTTGGAGGAAGATTTAACT 977

839 TC 840

978 TC 979

RESULT 10

US-09-201-458-1

```
; Sequence 1, Application US/09201458A
; Patent No. 6458942
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: 28-kDa Immunoreactive Protein Gene of Ehrlichia
; TITLE OF INVENTION: canis and Uses Thereof
; FILE REFERENCE: D6152
; CURRENT APPLICATION NUMBER: US/09/201,458A
; CURRENT FILING DATE: 1998-11-30
; NUMBER OF SEQ ID NOS: 21
; SEQ ID NO 1
; LENGTH: 1607
; TYPE: DNA
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: nucleic acid sequence of a gene encoding a 30 kDa
; immunoreactive protein of Ehrlichia canis
; US-09-201-458-1

Query Match      28.4%; Score 238.4; DB 3; Length 1607;
Best Local Similarity 57.7%; Pred. No. 4.9e-53;
Matches 486; Conservative 0; Mismatches 346; Indels 10; Gaps 3;

Qy      1 ATGAATTATAGAAAAATCTAGTAGAAGCGCGTTAAATCTCAATTAATGTCAATCTTACCA 60
Db      146 ATGAATTGCAAAAAAATCTTATACAACTGCATTAATATATCAATTAATGTCTATTTCCA 205

Qy      61 TATCAGTCTTTTGCAGATCCTGTAGGTTCAAGAACTAATGATGATAACAAGAGCGTCTCTAC 120
Db      206 AGCATATCTTTTCTGATCTATCAAGATGGTAACTATGTTGGTAA-----CTTCTAT 259

Qy      121 ATTAGTCAAAAGTACAAATCTCAAGTATATCACTTTTAGAAAAATTTCTCTGCTGAAGA--AA 178
Db      260 ATTAGTGGAAAGTATGTACCAAGTGTCTCACAATTTTGGTAGCTTCTCAGCTAAAGAAGAA 319

Qy      179 CTCCTATTATAGAACAAATCTCTCACTAAAAAGTTTCGGACTAAAGAAAGATGGTG 238
Db      320 AGCAAAATCAACTGTGGAGTTTTTGGATTAAAAACATGATTTGGATGGAGTCCAAATACT- 378

Qy      239 ATATAACAAAAAGACGATTTTACAAGAGTAGCTCCAGGCATTTGATTTTCAAAATAACT 298
Db      379 -TAAGATAAACACGCTGACTTTTACTGTTCCAAACTATTTCGTTCAGATACGAAACATC 437

Qy      299 TAATATCAGGATTTTCAGGAAGTATTTGGTTCATCTATGGACCGAACCAAGATAGAACTTG 358
Db      438 CATTTCTAGGGTTTGCAGGAGCTATCGGTTCATCAATGGGTGGCCCAAGAAATAGAAATTCG 497

Qy      359 AAGCTGCATATCAACAAATTTAATCCAAAAACCCGATCAATGATGATGATAATGGTG 418
Db      498 AAATATCTTATGAAGCATTTGACGTAAAGAGTCTTAATATCAATTTATCAAAATGACGCGC 557

Qy      419 AATACTATAAACATTTTGGCATTTATCTCGTAAAGATGCAATGGAGAGATCAGCAATATGTAG 478
Db      558 ACAGGTACTCGGCTCTATCTCATCACACATCGCGAGCCATGGAGAGCTGATAAATTTGTCT 617

Qy      479 TACTTAAAAATGACGGCAATACTTTTATGTCATTCATGTTTAAATACCTTGTCTATGACATTA 538
Db      618 TCTTAAAAAACAAGGGTTAATGACATATCACTTGGCAATAAATGCAATGATATGATATAA 677

Qy      539 CAGCTGAAGAGTATCTTTTCGTACCATATGATGCAAGGTATAGGAGCAGATCTTATCA 598
Db      678 TAAATGACAAAGTACCTGTTTCTCTTATATATGCGCAGGTATTTGGTACTGATTTGATTT 737

Qy      599 CTATTTTAAAGACCTCAATCTAAAAATTTGCTTACCAGGAAATAGGTATTATGTTACC 658
Db      738 CTATGTTTGAAGCTCAAGTCTTAAAAATTTCTTACCAGGAAATAGGTATTATGTTACT 797

Qy      659 CTATCACACCAAGATCTCTGCATTTTATTTGGTGGATACACTACGCGGCTTATTTGGTAA 718
Db      798 CTATTAATCCGAAACCTCTGTTTTCATCGGTGGGCACTTTCCAGAGATCATAGTAATG 857

; Sequence 1, Application US/09811007A
; Patent No. 6660269
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/09/811,007A
; CURRENT FILING DATE: 2001-10-23
; PRIOR APPLICATION NUMBER: 09/660,587
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 1
; LENGTH: 1607
; TYPE: DNA
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: nucleic acid sequence of E. canis p28-7
; US-09-811-007A-1

Query Match      28.4%; Score 238.4; DB 4; Length 1607;
Best Local Similarity 57.7%; Pred. No. 4.9e-53;
Matches 486; Conservative 0; Mismatches 346; Indels 10; Gaps 3;

Qy      1 ATCAATTATATAGAAAAATCTAGTAGAAGCGCGTTAAATCTCAATTAATGTCAATCTTACCA 60
Db      146 ATCAATTGCAAAAAAATCTTATACAACTGCATTAATATATCAATTAATGTCTATTTCCA 205

Qy      61 TATCAGTCTTTTGCAGATCCTGTAGGTTCAAGAACTAATGATGATAACAAGAGCGTCTCTAC 120
Db      206 AGCATATCTTTTCTGATCTATCAAGATGGTAACTATGTTGGTAA-----CTTCTAT 259

Qy      121 ATTAGTCAAAAGTACAAATCTCAAGTATATCACTTTTAGAAAAATTTCTCTGCTGAAGA--AA 178
Db      260 ATTAGTGGAAAGTATGTACCAAGTGTCTCACAATTTTGGTAGCTTCTCAGCTAAAGAAGAA 319

Qy      179 CTCCTATTATAGAACAAATCTCTCACTAAAAAGTTTCGGACTAAAGAAAGATGGTG 238
Db      320 AGCAAAATCAACTGTGGAGTTTTTGGATTAAAAACATGATTTGGATGGAGTCCAAATACT- 378

Qy      239 ATATAACAAAAAGACGATTTTACAAGAGTAGCTCCAGGCATTTGATTTTCAAAATAACT 298
Db      379 -TAAGATAAACACGCTGACTTTTACTGTTCCAAACTATTTCGTTCAGATACGAAACATC 437

Qy      299 TAATATCAGGATTTTCAGGAAGTATTTGGTTCATCTATGGACCGAACCAAGATAGAACTTG 358
Db      438 CATTTCTAGGGTTTGCAGGAGCTATCGGTTCATCAATGGGTGGCCCAAGAAATAGAAATTCG 497

Qy      359 AAGCTGCATATCAACAAATTTAATCCAAAAACCCGATCAATGATGATGATAATGGTG 418
Db      498 AAATATCTTATGAAGCATTTGACGTAAAGAGTCTTAATATCAATTTATCAAAATGACGCGC 557

Qy      419 AATACTATAAACATTTTGGCATTTATCTCGTAAAGATGCAATGGAGAGATCAGCAATATGTAG 478
Db      558 ACAGGTACTCGGCTCTATCTCATCACACATCGCGAGCCATGGAGAGCTGATAAATTTGTCT 617
```

```
QY 479 TACTTAAAAATGACGGCATAACTTTTATGTGTCATTGATGGTTAATACATCTGCTATGACATTA 538
Db 618 TCTTTAAAAACGAAGGTTAAATTGACATATCACTTGCATTAATAATGCATGTTATGATATAA 677
QY 539 CAGCTGAAGGAGTATCTTTTCTGATACCATATGATGTCAGGTATAGGACGACAGATCTTATCA 598
Db 678 TAAATGACAAAGTACCTGTTTCTCTTATATATGCGCAGGTATTTGGTACTGATTTGATTT 737
QY 599 CTATTTTAAAGACCTCAATCTAAATTTGCTTACCAAGGAAAAATAGGTATTTAGTTACC 658
Db 738 CTATGTTTGAAGCTACAAAGTCTTAAATTTCTTACCAAGGAAAACTGGGCATTTAGTTACT 797
QY 659 CTATCACACAGAGTCTCTGCACTTTATGCTGTGATACCTACCTGCGTTATTTGGTAAATA 718
Db 798 CTATTAATCCGGAACCTCTGTTTCTCTGCTGGGCATTTTCCACAGGATCATAGGTAATG 857
QY 719 AATTTGAGAAGATACCTGTATTAATCACTCTGCTAGTATTTAAATGATGCTCTCTCAAAACACAT 778
Db 858 AGTTTGAAGATATTCCTGCAATAGTACTCTAGTAACTCACTACAAATAGTGGACCAAT 917
QY 779 CTGCTTCAGTAACTCTTGACGTTGGATCTTTGGCGGAGAAATTTGGATGAGGTTACCT 838
Db 918 TTCAACAGTAACACTAAATGTGTGTCATCTTGGTTTGAAGTGGAGGAAGATTTAACT 977
QY 839 TC 840
Db 978 TC 979

RESULT 12
US-09-660-587-5
; Sequence 5, Application US/09660587
; Patent No. 6392023
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP2
; CURRENT FILING DATE: 2000-09-12
; PRIOR FILING DATE: 1999-03-03
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 5
; LENGTH: 840
; TYPE: DNA
; ORGANISM: Ehrlichia canis
; FEATURE:
; NAME/KEY: mat_peptide
; OTHER INFORMATION: nucleic acid sequence of p28-6
US-09-660-587-5

Query Match 27.9%; Score 234; DB 3; Length 840;
Best Local Similarity 59.0%; Pred. No. 5.6e-52;
Matches 503; Conservative 0; Mismatches 325; Indels 24; Gaps 5;

QY 1 ATGAATTAAGAAAAATCTAGTAAGAGCGCGTTAATCTCATTAATGTCAATCTTACCA 60
Db 1 ATGAATTAAGAAAAATCTATATAACCACTGCATTAATGTCAATTAATGTACTATGCTCCA 60
QY 61 TATCAGTCTTTTGCAGATCTCTGATGTTCAAGAACTAATGTAACAAGAGGCTCTAC 120
Db 61 AGCATATCTTTTCTGTACTATATAAAG-----ACGATAACACTGTGTAGCTTCTAC 111
QY 121 ATTAGTCAAAAGTACAAATCAAGTATATCACACTTTTAGAAAAATTTCTGCTGAAGA--AA 178
Db 112 ATCAGTGGAAAAATATGTACCAAGTGTTCACATTTTGGTGTCTTCTCAGCTAAGAAGAA 171
QY 179 CTCCTATTAATGGAAACAAATCTCTCACTAAAAAGTTTTCGGACTAAAGAAAGATGGTG 238
Db 172 AGAAACTCAACTGTTGGAGTTTTTGGATTTAAACATGATTTGGAATGGAGGTACAATATCT 231
```

```
QY 239 ATATAACAAAAAAGACGATTTTACAGAGTAGTCCAGGCATGATTTTC-AAAATAC 297
Db 232 AACTCTTCTCCAGAAAAATATATTCACAGTTCAAAAATATTCGTTTAAATACGAAAAACA 291
QY 298 TTAATATCAGGATTTTTCAGGAAGTATTGGTTACTCTATGACGAGCAAGAAATAGAACTT 357
Db 292 CCATCTCTTAGGTTTTCAGGAGCTATTGGTTATTCAATGGGTGGCCCAAGAAATAGAACTT 351
QY 358 GAAGCTGCATATCAACAATTTAATCCAAAAACACCGATAACAATGATGATGATAAATGGT 417
Db 352 GAAGTCTCTGACGAGACATTCGATGTGAAAAATCAAGAACTAATTAATTAAGAACGGCGCA 411
QY 418 GAATACATATAAACAATTTTGCATTTATCTCGTAAGATGCAATG-----GAAGATCAG 468
Db 412 CACAGATACCTGTGCTTTATCTCATCATAGTTTCAGCAACCAAGCATGTCCTCCGCAAGTAAC 471
QY 469 CAATATGTAGTACTTAAAAATGACGGCATAAACTTTTATGTGCTATTGATGGTTAATACTTGC 528
Db 472 AAATTTGTTTCTTAAAAAATGAAGGTTAATTTGACTTATCATTTATGATAAATGCATGC 531
QY 529 TATGACATTAAGCTGAAGAGTATCTTTTCGTACCATATGATGTCAGGTATAGGAGCA 588
Db 532 TATGACATAAATAATTCAGAGGAATGCCCTTTTTCACCTTATATTTTGTGACGTTGGTACT 591
QY 589 GATCTTATCAGTATTTTAAAGACCTCAATCTAAAAATTTGCTTTACCAAGGAAAAATAGGT 648
Db 592 GATGTTGTTTCCATGTTTGAAGCTATAAAATCTTAAATTTCTTACCAGGAAAACTAGGA 651
QY 649 ATTAGTTACCTATCACACAGAAAGTCTCTGCAATTTATTTGGTGGATACCTACCATGGCGTT 708
Db 652 TTAGGTTATAGTATAAGTTTCAGAAAGCTCTGTTTTTATCGGTGACACATTTTCACAGATC 711
QY 709 ATTGGTAATAAATTTGAGAGATACCTGTAAATACCTCTGCTAGTATTAATGATGCTCCT 768
Db 712 ATAGGTAATAAATTTAGAGACATCCCTGCTATGTTTCTAGTGGATCAA---ATCTTCCA 768
QY 769 CAAACACATCTGCTTCAGTAACTCTTACGTTTGGATACCTTTGGCGGAGAAAAATTTGGAATG 828
Db 769 GAAACCAATTTGCAATAGTAACACATAAATGTGTGTCACCTTTGGCATAGAACTTTGGAGGA 828
QY 829 AGGTTCACTTC 840
Db 829 AGATTTAACTTC 840

RESULT 13
US-09-261-358A-5
; Sequence 5, Application US/09261358A
; Patent No. 6403780
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP
; CURRENT APPLICATION NUMBER: US/09/261,358A
; CURRENT FILING DATE: 1999-03-03
; PRIOR APPLICATION NUMBER: 09/201,458
; PRIOR FILING DATE: 1998-11-30
; NUMBER OF SEQ ID NOS: 33
; SEQ ID NO 5
; LENGTH: 840
; TYPE: DNA
; ORGANISM: Ehrlichia canis
; FEATURE:
; NAME/KEY: mat_peptide
; OTHER INFORMATION: nucleic acid sequence of ECa28SA3
US-09-261-358A-5

Query Match 27.9%; Score 234; DB 3; Length 840;
Best Local Similarity 59.0%; Pred. No. 5.6e-52;
```


Matches	503;	Conservative	0;	Mismatches	325;	Indels	24;	Gaps	5;
Qy	1	ATGAATTATAAGAAAAATCTTAGTAAAGACCGCGTTAAATCTCATTTAAATGTCTCAATCTTACCA	60						
Db	1	ATGAATTTGCAAAAAAATTTCTTTATAACCAACTGCATTTAAATGTCAATTAATGTACTATGCTCCA	60						
Qy	61	TATCAGTCTTTTGCAGATCCCTGTAGGTTCAAGAACTAATGATAACAAGAAGCGCTTCTTAC	120						
Db	61	AGCATATCTTTTCTCGATACATATACAAG-----ACGATAACACTGGTAGGTTCTTCTAC	111						
Qy	121	ATTAGTGCAAAAGTACAAATCCCAAGTATATACACACTTTAGAAAAATCTCTGCTGAAGA--AA	178						
Db	112	ATCAGTGGAAATATGTATACCAGGTGTTTCACATTTTGGTGTCTTCTCAGCTTAAGAAGAA	171						
Qy	179	CTCCTATTAATGGAAACAAATCTCTCACTAAAAAAGTTTTCCGACTAAAGAAAGATGGTG	238						
Db	172	AGAAACTCACTGTTGGAGTTTTTGGATTAAACATGATTGGAATGGAGGTACAATATCT	231						
Qy	239	ATATAACAAAAAAGACGATTTTACAAGAGTAGTCCAGGCAATGTATTTTC-AAAAATAAC	297						
Db	232	AACCTCTTCTCCAGAAAAATATATTCACAGTTCAAAAATTAATTCGTTTAAATACGAAAAACAAC	291						
Qy	298	TTAATATCAGGATTTTTCAGGAAGTATTGGTTTACTCTATGGACGACCAAGAATAAGAACTT	357						
Db	292	CCATCTTAGGGTTTGCAGGAGCTATTGGTTATTTCAAATGGGTGGCCCAAGAATAAGAACTT	351						
Qy	358	GAACTGCATATCAACAATTTTAATTCAAAAAACAACCGAATACAATGATACTGATAATGGT	417						
Db	352	GAAGTTCTGTACGAGACATTCGATGTGAAAAATCAGAACAAATATATNAGAACCGCGCA	411						
Qy	418	GAATACTATAAAACAATTTTGGCAATTATCTGTAAGAATGCAATG-----GAAGATCAAG	468						
Db	412	CACAGATACTGTGCTTTATCTCATCATAGTTTCAGCAACAAGCATGTCTCCGCAAGTAAC	471						
Qy	469	CAATATGTAGTACTTAAAAATGACGGCATAACTTTATGTCAATGTATGTTTAATACTTGC	528						
Db	472	AAATTTGTTTCTTAAAAAAATGAAGGGTTAATGACTTATCATTTATGATAAAATGCAATGC	531						
Qy	529	TATGACATTTACAGCTGAAGGAGTATCTTTCCGTACCATATGTCAGAGGTATAGGAGCA	588						
Db	532	TATGACATATAATGAAGGAATGCCTTTTCACCTTATATTTGTGACAGGTGTGGTACT	591						
Qy	589	GATCTTATCACTATTTTAAAGACCTCAATCTAAAAATTTGCTTACCAGGAAAAAATAGGT	648						
Db	592	GATGTTGTTTCCATGTTTGAAGCTATAAATCCTAAAAATTTCTTACCAAGGAAAAACTAGGA	651						
Qy	649	ATTAGTTACCTATCAACACAGAGTCTCTGCATTTTATTTGTTGATATACCATGGCGTT	708						
Db	652	TTAGGTTTAGTATAAGTTTCAGAAGCCTCTGTTTTTATTCGGTGGACACTTTTCACAGATC	711						
Qy	709	ATTGGTAAATAATTTGAGAGATACCTGTATAATACTCTGTAGTATTAAATGATGTCCT	768						
Db	712	ATAGGTAATGAAATTTAGAGACATCCCTGCTATGTTTCTTAGTGGATCAA---ATCTTCCA	769						
Qy	769	CAAAACCATCTGCTTCAAGTAACCTTTTGAAGTTGGATCTTTTGGCGGAGAAATTTGGAATG	828						
Db	769	GAAAAACCAATTTTGGCAATAGTAAACACTAAATGTGTGTCACTTTTGGCATAGAACTTTGGAGGA	828						
Qy	829	AGGTTTCACTTC	840						
Db	829	AGATTTAACTTC	840						

RESULT 14
US-09-811-007A-5
; Sequence 5, Application US/09811007A
; Patent No. 6650269
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses thereof

```

: FILE REFERENCE: D6152CIP2
: CURRENT APPLICATION NUMBER: US/09/811,007A
: CURRENT FILING DATE: 2001-10-23
: PRIOR APPLICATION NUMBER: 09/660,587
: PRIOR FILING DATE: 2000-09-12
: NUMBER OF SEQ ID NOS: 46
: SEQ ID NO 5
: LENGTH: 840
: TYPE: DNA
: ORGANISM: Ehrlichia canis
: FEATURE:
: NAME/KEY: mat_peptide
: OTHER INFORMATION: nucleic acid sequence of p28-6
: US-09-811-007A-5

```

Query Match	27.9%	Score 234	DB 4	Length 840
Best Local Similarity	59.0%	Pred. No. 5.6e-52		
Matches	503	Conservative	0	Mismatches 325; Indels 24; Gaps 5
Qy	1	ATGAATTTATGAAGAAAATTTCTAGTAAGAAGCGCGTTAATCTCATTTAATGTCAATCTTACCA	60	
Db	1	ATGAATTTGCAAAAAATTTCTTATAACAACTGCATTAATGTCAATTAATGTACTATGTCTCCA	60	
Qy	61	TATCAGTCTTTTGCAGATCTCTGTAGGTTCAAGAACTAATGATAACAAGAAGGCTTCTAC	120	
Db	61	AGCATATCTTTTCTGATCATATACAAG-----ACGNATACCTGGTAGCTTCTAC	111	
Qy	121	ATTAGTGCAAGTACAATTCOAAGTATATCACTTTTAGAAAATTTCTCTGTGGAAGA--AA	178	
Db	112	ATCAGTGGAAAAATATGTPACCAAGTGTTCACATTTTGGTGTTCCTCAGCTAAAAGAGAA	171	
Qy	179	CTCCTATTATGTGNAACAAATTTCTCTCACTAAAGTTTTTCGGACTAAAGAAAGATGGTG	238	
Db	172	AGAACTCAACTGTGTGGAGTFTTTTGGAAATTAACCATGATTGGAATGGAGGTGACAATATCT	231	
Qy	239	ATATAACAAAAAAGACGATTTTACAAGAGTAGTCCAGGCAITTTGATTTTC-AAAAATAAC	297	
Db	232	AACCTCTTCCAGAAAATATATTACAGTTTCAAAATTTATTCGTTTAAATACGAAAACACAC	291	
Qy	298	TTAATATCAGGATTTTCCAGGAATGATTTGGTTTATCTCTATGGACGGACCAAGAATGAACTTT	357	
Db	292	CCATTTCTTAGGGTTTGCAGGAGCTATTGGTTATTCAATGGGTGGCCCAAGAATAGAACTTT	351	
Qy	358	GAAGCTGCATATCAACAAATTTAATCCAAAAACACCCGATACAACTGACTGATGATAATGGT	417	
Db	352	GAAGTTCTGTACGAGACATTCGATGTGGAATAATCAGAAACAATAATATAGAAGCGGCCCA	411	
Qy	418	GAATACTATAAAAATTTTGCATTTATCTCGTAAAGATGCAATG-----GAAGATCAG	468	
Db	412	CACAGATACTGTGCTTTTATCTCATATAGTTCAGACAACGATGTCTCCGCAAGTAAC	471	
Qy	469	CAATATGTAGTACTATAAAATGACGGCATTAACCTTTTATGTCAITTTGATGTGTTAACTTTGC	528	
Db	472	AAATTTGTTTTTCTTAAAAAATGAAGGGTTAATTTGACTTATCATTTATGATAAAATGCATGC	531	
Qy	529	TATGACATTTACAGCTGAAGGAGTATCTTTCGTACCATATGATCTGCAGGTTATAGGAGCA	588	
Db	532	TATGACATAAATATTGAAGGAATGCCCTTTTTCACCTTATATTGTGCAAGGTTGTGTTACT	591	
Qy	589	GATCTTTATCACTATTTTTTAAAGACCTCAATCTCAAAATTTGCTTACCAGGAAAAAATAGGT	648	
Db	592	GATGTTGTTTCCATGTTTGAAGCTATATAATCCTAAAAATTTCTTACCAGGAAAAACTAGGA	651	
Qy	649	ATTAGTTTACCCTATCAACACAGAAGTCTCTGCAATTTATTTGGTGGATACTACCATGGCGGTT	708	
Db	652	TTAGGTTTATAGTATAAGTTTCAGAAAGCCTCTGTTTTTTTTTATTCGGTGGACACTTTTTCACAGATC	711	
Qy	709	ATTGGTAAATAAATTTTGAGAGAGTACCTGTGTAATCACTCTGTGAGTATTAAATGATGCTCCT	768	
Db	712	ATAGGTTAATGAAATTTTAGAGACATCCCTTGCTATGGTTCTTAGTGATCA---ATTCTCCA	768	
Qy	769	CAAAACCACTCTGCTTCAGTAACCTTTTGAGGTTGGGATATCTTTGGCGGAGAAATTTGGAATG	828	

Db 769 GAAAAACCAATTTGCAATAGTAACACTAAATGTGTGTCACCTTTGGCATAGAACTTTGGAGGA 828
Qy 829 AGGTTACCTTC 840
Db 829 AGATTTAACTTC 840

RESULT 15
US-09-314-701-37
; Sequence 37, Application US/09314701
; Patent No. 6544517
; GENERAL INFORMATION:
; APPLICANT: Rikihisa, Yasuko
; APPLICANT: Ohsei, No. 6544517io
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia
; FILE OF INVENTION: Chafreensis
; FILE REFERENCE: 22727/04021
; CURRENT APPLICATION NUMBER: US/09/314,701
; CURRENT FILING DATE: 1999-05-19
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 37
; LENGTH: 843
; TYPE: DNA
; ORGANISM: Ehrlichia canis
; FEATURE:
; NAME/KEY: CDS
; LOCATION: (1)..(843)
US-09-314-701-37

Query Match 27.7%; Score 232.4; DB 4; Length 843;
Best Local Similarity 58.9%; Pred. No. 1.5e-51;
Matches 502; Conservative 0; Mismatches 326; Indels 24; Gaps 5;

Qy 1 ATGAATTTAAGAAAAATCTAGTAAGAAGCGCGTTAATCTCATTAATGTCAATCTTACCA 60
Db 1 ATGAATTTGCAAAAAATCTTATAACAACCTGCATTAAATGTCAATTAATGTACTATGCTCCA 60

Qy 61 TATCAGTCTTTTGCAGATCTCTGTAGGTTCAAGAACTAATGATAACAAGAAGGCTTCTAC 120
Db 61 AGCATATCTTTTCTGTACTATACAAAG-----ACGATAACACTGGTGTACTCTCTAC 111

Qy 121 ATTAGTGCAAGTACAACTCAAGTATATCACACTTTTAGAAAAATCTCTGCTGAAGA--AA 178
Db 112 ATCAGTGGAAATATGTACCAAGTGTTCACATTTTGGTGTCTTCAGCTAAGAAGAA 171

Qy 179 CTCCTATTAATGGAAACAAAATCTCTCAATAAAAGTTTTCGGACTAAAGAAAGATGGTG 238
Db 172 AGAAACTCAACTGTTGGAGTTTTTGGATTAAACACATGATTGGAATGGAGGTACAATATCT 231

Qy 239 ATATAACAAAAAAGACGATTTTACAGAGTAGCTCCAGGCAATGATTTTC-AAAAATAC 297
Db 232 AACTCTTCTCCAGAAAAATATATTCCACAGTTCAAAATTAATTCGTTTAAATACGAAAAACAAC 291

Qy 298 TTAATATCAGGATTTTCAGGAAGTATTGGTTACTCTATGGACGACCAAGAATAGAACTT 357
Db 292 CCATTCTTAGGGTTTGACGAGCTATTGGTTATTCAATGGGTGGCCCAAGATAGAACTT 351

Qy 358 GAAGCTGCATATCAACAATTTAATCCAAAAAACAACCGATACCAATGATGATGATAATGGT 417
Db 352 GAAGTCTGTACGAGACATTCGATGTGAAAAATCAGAAACAATAATTATAAGAACGGCGCA 411

Qy 418 GAATACTATAACACATTTTGCATTTATCTCGTAAGATGCAATG-----GAAGATCAG 468
Db 412 CACAGATACGTGTGCTTTTATCTCATCATAGTTCAGCAACAACATGTCCTCCGCAAGTAAC 471

Qy 469 CAATATGTAGTACTTAAAAATGACGGCAATACTTTTATGTCAATTTGTTAATGTTTACTTGC 528
Db 472 AAATTTGTTTCTTAAAAAATGAAGGGTAAATGACCTTATCAATTAATGATAAATGCATGC 531

Qy 529 TATGACATTAACGCTGAAGGAGTATCTTTGTTACCATATGATGTCAGGATAGGAGCA 588
Db 532 TATGACATAAATTTGAAGGAATGCCCTTTTTCACCTTATATTTTGTGAGGTTGGTACT 591

Qy 589 GATCTTATCAGTATTTTAAAGACCTCAATCTAAATTTGCTTACCAAGAAAAATAGGT 648
Db 592 GATGTTGTTTCCATGTTTGAAGCTATAAATCTTAAATTTCTTACCAAGAAAACTAGGA 651

Qy 649 ATTAGTTACCTTATCACACCAGAAAGTCTCTGCATTTTATTTGGTGGATACTACCATGGCGTT 708
Db 652 TTAGGTTATAGTATAAGTTTCAGAAAGCCTCTGTTTTTATCGGTGGACACATTTTCACAGATC 711

Qy 709 ATTGGTAATAAATTTGAGAAGATACCTGTAATAAATCTCTGTAGTATTAATGATGCTCCT 768
Db 712 ATAGGTAATAAATTTTAGAGACATCCCTGCTATGGTTCTCTAGTGGATCAA---ATCTTCCA 768

Qy 769 CAAACCACATCTGCTTCAGTAACTCTTGACGTTGGATACCTTTGGCGGAGAAAAATTGGAATG 828
Db 769 GAAACCAATTTGCAATAGTAACACTAAATGTGTGTCACCTTTGGTTTAGAACTTGGAGGA 828

Qy 829 AGGTTACACCTTC 840
Db 829 AGATTAACTTC 840

Search completed: August 30, 2005, 09:27:59
Job time : 1474 secs

Result No.	Score	Query		DB	ID	Description
		Match	Length			
1	136	100.0	280	3	US-09-660-587-42	Sequence 42, Appl
2	136	100.0	280	4	US-09-314-701-48	Sequence 48, Appl
3	136	100.0	280	4	US-09-811-007A-42	Sequence 42, Appl
4	97	71.3	283	3	US-09-660-587-10	Sequence 10, Appl
5	97	71.3	283	4	US-09-261-358A-10	Sequence 10, Appl
6	97	71.3	283	4	US-09-201-458-6	Sequence 6, Appl
7	97	71.3	283	4	US-09-314-701-4	Sequence 4, Appl
8	97	71.3	283	4	US-09-811-007A-10	Sequence 10, Appl
9	52	38.2	378	4	US-09-134-000C-5909	Sequence 5909, Ap
10	50	36.8	284	3	US-09-660-587-15	Sequence 15, Appl
11	50	36.8	284	4	US-09-261-358A-15	Sequence 15, Appl
12	50	36.8	284	4	US-09-201-458-11	Sequence 11, Appl
13	50	36.8	284	4	US-09-811-007A-15	Sequence 15, Appl
14	49	36.0	629	4	US-10-081-923-6	Sequence 6, Appl
15	49	36.0	1833	4	US-08-621-944A-4	Sequence 4, Appl
16	49	36.0	1833	4	US-08-945-567D-4	Sequence 4, Appl
17	49	36.0	1992	4	US-08-621-944A-3	Sequence 3, Appl
18	49	36.0	1992	4	US-08-945-567D-3	Sequence 3, Appl
19	49	36.0	2048	3	US-09-268-347-48	Sequence 48, Appl
20	48.5	35.7	416	1	US-08-464-523B-33	Sequence 33, Appl
21	48.5	35.7	476	4	US-09-800-170-19	Sequence 19, Appl
22	48	35.3	226	4	US-09-071-035-120	Sequence 120, App
23	48	35.3	252	3	US-09-071-035-118	Sequence 118, App
24	48	35.3	293	3	US-09-660-587-40	Sequence 40, Appl
25	48	35.3	293	4	US-09-314-701-44	Sequence 44, Appl
26	48	35.3	293	4	US-09-811-007A-40	Sequence 40, Appl
27	48	35.3	300	4	US-09-314-701-50	Sequence 50, Appl

```
; ORGANISM: Ehrlichia canis
US-09-314-701-48

Query Match      100.0%; Score 136; DB 4; Length 280;
Best Local Similarity 100.0%; Pred. No. 5.6e-12;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 PINGTSLTKKVFLGKKDGDITKDD 26
Db 61 PINGTSLTKKVFLGKKDGDITKDD 86

RESULT 3
US-09-811-007A-42
; Sequence 42, Application US/09811007A
; Patent No. 6660269
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/09/811,007A
; CURRENT FILING DATE: 2001-10-23
; PRIOR APPLICATION NUMBER: 09/660,587
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 42
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. canis p28-2 protein
US-09-811-007A-42

Query Match      100.0%; Score 136; DB 4; Length 280;
Best Local Similarity 100.0%; Pred. No. 5.6e-12;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 PINGTSLTKKVFLGKKDGDITKDD 26
Db 61 PINGTSLTKKVFLGKKDGDITKDD 86

RESULT 4
US-09-660-587-10
; Sequence 10, Application US/09660587
; Patent No. 6392023
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/09/660,587
; CURRENT FILING DATE: 2000-09-12
; PRIOR APPLICATION NUMBER: 09/261,358
; PRIOR FILING DATE: 1999-03-03
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 10
; LENGTH: 283
; TYPE: PRT
; ORGANISM: Ehrlichia chaffeensis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. chaffeensis OMP-1B
US-09-660-587-10

Query Match      71.3%; Score 97; DB 3; Length 283;
Best Local Similarity 78.3%; Pred. No. 2.7e-06;
Matches 18; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

; ORGANISM: Ehrlichia chaffeensis
US-09-261-358A-10
; Sequence 10, Application US/09261358A
; Patent No. 6403780
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP
; CURRENT APPLICATION NUMBER: US/09/261,358A
; CURRENT FILING DATE: 1999-03-03
; PRIOR APPLICATION NUMBER: 09/201,458
; PRIOR FILING DATE: 1998-11-30
; NUMBER OF SEQ ID NOS: 33
; SEQ ID NO 10
; LENGTH: 283
; TYPE: PRT
; ORGANISM: Ehrlichia chaffeensis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. chaffeensis OMP-1B
US-09-261-358A-10

Query Match      71.3%; Score 97; DB 4; Length 283;
Best Local Similarity 78.3%; Pred. No. 2.7e-06;
Matches 18; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

Qy 1 PINGTSLTKKVFLGKKDGDITK 23
Db 64 PINGTSLTKKVFLGKKDGDIAQ 86

RESULT 5
US-09-261-358A-10
; Sequence 10, Application US/09261358A
; Patent No. 6403780
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP
; CURRENT APPLICATION NUMBER: US/09/261,358A
; CURRENT FILING DATE: 1999-03-03
; PRIOR APPLICATION NUMBER: 09/201,458
; PRIOR FILING DATE: 1998-11-30
; NUMBER OF SEQ ID NOS: 33
; SEQ ID NO 10
; LENGTH: 283
; TYPE: PRT
; ORGANISM: Ehrlichia chaffeensis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. chaffeensis OMP-1B
US-09-261-358A-10

Query Match      71.3%; Score 97; DB 4; Length 283;
Best Local Similarity 78.3%; Pred. No. 2.7e-06;
Matches 18; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

Qy 1 PINGTSLTKKVFLGKKDGDITK 23
Db 64 PINGTSLTKKVFLGKKDGDIAQ 86

RESULT 6
US-09-201-458-6
; Sequence 6, Application US/09201458A
; Patent No. 6458942
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: 28-kDa Immunoreactive Protein Gene of Ehrlichia
; TITLE OF INVENTION: canis and Uses Thereof
; FILE REFERENCE: D6152
; CURRENT APPLICATION NUMBER: US/09/201,458A
; CURRENT FILING DATE: 1998-11-30
; NUMBER OF SEQ ID NOS: 21
; SEQ ID NO 6
; LENGTH: 283
; TYPE: PRT
; ORGANISM: Ehrlichia chaffeensis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. chaffeensis OMP-1B
US-09-201-458-6

Query Match      71.3%; Score 97; DB 4; Length 283;
Best Local Similarity 78.3%; Pred. No. 2.7e-06;
Matches 18; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

Qy 1 PINGTSLTKKVFLGKKDGDITK 23
Db 64 PINGTSLTKKVFLGKKDGDIAQ 86

RESULT 7
US-09-314-701-4
; Sequence 4, Application US/09314701
; Patent No. 6544517
```

```
; GENERAL INFORMATION:
; APPLICANT: Rikinisa, Yasuko
; APPLICANT: Ohasi, No. 6544517io
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia
; TITLE OF INVENTION: Chaffeensis
; FILE REFERENCE: 22727/04021
; CURRENT APPLICATION NUMBER: US/09/314,701
; CURRENT FILING DATE: 1999-05-19
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 4
; LENGTH: 283
; TYPE: PRT
; ORGANISM: Ehrlichia chaffeensis
US-09-314-701-4

Query Match      71.3%; Score 97; DB 4; Length 283;
Best Local Similarity 78.3%; Pred. No. 2.7e-06;
Matches 18; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

Qy  1 PINGNSLTKKVFGKKGDDITK 23
Db  64 PINGNTSITKKVFGKKGDDIAQ 86

RESULT 8
US-09-811-007A-10
; Sequence 10, Application US/09811007A
; Patent No. 6660269
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/09/811,007A
; CURRENT FILING DATE: 2001-10-23
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 10
; LENGTH: 283
; TYPE: PRT
; ORGANISM: Ehrlichia chaffeensis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. chaffeensis OMP-1B
US-09-811-007A-10

Query Match      71.3%; Score 97; DB 4; Length 283;
Best Local Similarity 78.3%; Pred. No. 2.7e-06;
Matches 18; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

Qy  1 PINGNSLTKKVFGKKGDDITK 23
Db  64 PINGNTSITKKVFGKKGDDIAQ 86

RESULT 9
US-09-134-000C-5909
; Sequence 5909, Application US/09134000C
; Patent No. 6617156
; GENERAL INFORMATION:
; APPLICANT: Lynn Doucette-Stamm et al
; TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO
; TITLE OF INVENTION: ENTEROCOCCUS FAECALIS FOR DIAGNOSTICS AND THERAPEUTICS
; FILE REFERENCE: 032796-032
; CURRENT APPLICATION NUMBER: US/09/134,000C
; CURRENT FILING DATE: 1998-08-13
; PRIOR FILING DATE: 1997-08-15
; NUMBER OF SEQ ID NOS: 6812
; SOFTWARE: PatentIn version 3.1
```

```
; SEQ ID NO 5909
; LENGTH: 378
; TYPE: PRT
; ORGANISM: Enterococcus faecalis
US-09-134-000C-5909

Query Match      38.2%; Score 52; DB 4; Length 378;
Best Local Similarity 39.1%; Pred. No. 13;
Matches 9; Conservative 6; Mismatches 8; Indels 0; Gaps 0;

Qy  3 NGTNSLTKKVFGKKGDDITK 25
Db  280 NGTNSITATSLFKYKENGVLND 302

RESULT 10
US-09-660-587-15
; Sequence 15, Application US/09660587
; Patent No. 6392023
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/09/660,587
; CURRENT FILING DATE: 2000-09-12
; PRIOR FILING DATE: 1999-03-03
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 15
; LENGTH: 284
; TYPE: PRT
; ORGANISM: Cowdria ruminantium
; FEATURE:
; OTHER INFORMATION: amino acid sequence of C. ruminantium MAP-1
US-09-660-587-15

Query Match      36.8%; Score 50; DB 3; Length 284;
Best Local Similarity 73.3%; Pred. No. 18;
Matches 11; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

Qy  9 TKKVFGKKGDDITK 23
Db  63 TKAVFGKKGDDGVK 77

RESULT 11
US-09-261-358A-15
; Sequence 15, Application US/09261358A
; Patent No. 6403780
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP
; CURRENT APPLICATION NUMBER: US/09/261,358A
; CURRENT FILING DATE: 1999-03-03
; PRIOR FILING DATE: 1998-11-30
; NUMBER OF SEQ ID NOS: 33
; SEQ ID NO 15
; LENGTH: 284
; TYPE: PRT
; ORGANISM: Cowdria ruminantium
; FEATURE:
; OTHER INFORMATION: amino acid sequence of C. ruminantium MAP-1
US-09-261-358A-15

Query Match      36.8%; Score 50; DB 4; Length 284;
```

Best Local Similarity 73.3%; Pred. No. 18;
Matches 11; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

Qy 9 TKVFGGLKDGDDTK 23
||| ||||| |
Db 63 TKAVFGLKDWGVK 77

RESULT 12

US-09-201-458-11
; Sequence 11, Application US/09201458A
; Patent No. 6458942
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; TITLE OF INVENTION: 28-Kda Immunoreactive Protein Gene of Ehrlichia
; TITLE OF INVENTION: canis and Uses Thereof
; FILE REFERENCE: D6152
; CURRENT APPLICATION NUMBER: US/09/201,458A
; CURRENT FILING DATE: 1998-11-30
; NUMBER OF SEQ ID NOS: 21
; SEQ ID NO 11
; LENGTH: 284
; TYPE: PRT
; ORGANISM: Cowdria ruminantium
; FEATURE:
; OTHER INFORMATION: amino acid sequence of C. ruminantium MAP-1
US-09-201-458-11

Query Match 36.8%; Score 50; DB 4; Length 284;
Best Local Similarity 73.3%; Pred. No. 18;
Matches 11; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

Qy 9 TKVFGGLKDGDDTK 23
||| ||||| |
Db 63 TKAVFGLKDWGVK 77

RESULT 13

US-09-811-007A-15
; Sequence 15, Application US/09811007A
; Patent No. 6660269
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/09/811,007A
; CURRENT FILING DATE: 2001-10-23
; PRIOR APPLICATION NUMBER: 09/660,587
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 15
; LENGTH: 284
; TYPE: PRT
; ORGANISM: Cowdria ruminantium
; FEATURE:
; OTHER INFORMATION: amino acid sequence of C. ruminantium MAP-1
US-09-811-007A-15

Query Match 36.8%; Score 50; DB 4; Length 284;
Best Local Similarity 73.3%; Pred. No. 18;
Matches 11; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

Qy 9 TKVFGGLKDGDDTK 23
||| ||||| |
Db 63 TKAVFGLKDWGVK 77

RESULT 14

US-10-081-923-6
; Sequence 6, Application US/10081923
; Patent No. 6593093
; GENERAL INFORMATION:
; APPLICANT: Uhl, James R.
; APPLICANT: Cockerill, Franklin R.
; TITLE OF INVENTION: Detection of Group A Streptococcus
; FILE REFERENCE: 07039-306001
; CURRENT APPLICATION NUMBER: US/10/081,923
; CURRENT FILING DATE: 2002-07-02
; NUMBER OF SEQ ID NOS: 17
; SOFTWARE: FastSeq for Windows Version 4.0
; SEQ ID NO 6
; LENGTH: 629
; TYPE: PRT
; ORGANISM: Group A Streptococcus
; FEATURE:
; OTHER INFORMATION: ptai sequence from Oklahoma University M1 strain
; PUBLICATION INFORMATION:
; AUTHORS: Ferretti et al.
; JOURNAL: Proc. Natl. Acad. Sci. USA
; VOLUME: 98
; PAGES: 4658-4663
; DATE: 2001-01-01
US-10-081-923-6

Query Match 36.0%; Score 49; DB 4; Length 629;
Best Local Similarity 55.6%; Pred. No. 64;
Matches 10; Conservative 3; Mismatches 1; Indels 4; Gaps 1;

Qy 4 GTNSLTKKVFGGLKGGDI 21
||| :||| :||| :
Db 222 GTNDITKRV---KGGDV 235

RESULT 15

US-08-621-944A-4
; Sequence 4, Application US/08621944A
; Patent No. 6440425
; GENERAL INFORMATION:
; APPLICANT: SASAKI, Ken
; APPLICANT: HARKNESS, Robin E.
; APPLICANT: LOOMORE, Sheena M.
; APPLICANT: KLEIN, Michel H.
; TITLE OF INVENTION: HIGH MOLECULAR WEIGHT MAJOR OUTER
; TITLE OF INVENTION: MEMBRANE PROTEIN OF MORAXELLA
; NUMBER OF SEQUENCES: 10
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Sim & McBurney
; STREET: Suite 701, 330 University Avenue
; CITY: Toronto
; STATE: Ontario
; COUNTRY: Canada
; ZIP: M5G 1R7
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patentin Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/621,944A
; FILING DATE: 26-MAR-1996
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/478,370
; FILING DATE: 07-JUN-1995
; CLASSIFICATION:
; ATTORNEY/AGENT INFORMATION:
; NAME: Stewart, Michael I
; REGISTRATION NUMBER: 24,973
; REFERENCE/DOCKET NUMBER: 1038-587
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (416) 595-1155

```
; TELEFAX: (416) 595-1163
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
;   LENGTH: 1833 amino acids
;   TYPE: amino acid
;   STRANDEDNESS: single
;   TOPOLOGY: linear
US-08-621-944A-4

Query Match      36.0%; Score 49; DB 4; Length 1833;
Best Local Similarity 38.1%; Pred. No. 2.2e+02;
Matches 8; Conservative 5; Mismatches 8; Indels 0; Gaps 0;

Qy      4 GTNSLTKKVFLKKDGDITKK 24
      ||| :|| :||| :|
Db     271 GTTRITRDKIGFARDGDVDEK 291
```

Search completed: August 27, 2005, 08:42:21
Job time : 4.31373 secs

This Page Blank (uspto)

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

OM protein - protein search, using sw model

Run on: August 27, 2005, 08:41:37 ; Search time 18.4379 Seconds
(without alignments)
554.080 Million cell updates/sec

Title: US-10-680-349-42_COPY_61_86

Perfect score: 136
Sequence: 1 PINGTNSLTKKVFGFKDGDITKKDD 26

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1767149 seqs, 392926209 residues

Total number of hits satisfying chosen parameters: 1767149

Minimum DB seq length: 0
Maximum DB seq length: 2000000000
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Published Applications AA.*
1: /cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep.*
2: /cgn2_6/ptodata/1/pubpaa/PCT_NEW_PUB.pep.*
3: /cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep.*
4: /cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.pep.*
5: /cgn2_6/ptodata/1/pubpaa/US07_NEW_PUB.pep.*
6: /cgn2_6/ptodata/1/pubpaa/PCTUS_PUBCOMB.pep.*
7: /cgn2_6/ptodata/1/pubpaa/US08_NEW_PUB.pep.*
8: /cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB.pep.*
9: /cgn2_6/ptodata/1/pubpaa/US09A_PUBCOMB.pep.*
10: /cgn2_6/ptodata/1/pubpaa/US09B_PUBCOMB.pep.*
11: /cgn2_6/ptodata/1/pubpaa/US09C_PUBCOMB.pep.*
12: /cgn2_6/ptodata/1/pubpaa/US09_NEW_PUB.pep.*
13: /cgn2_6/ptodata/1/pubpaa/US10A_PUBCOMB.pep.*
14: /cgn2_6/ptodata/1/pubpaa/US10B_PUBCOMB.pep.*
15: /cgn2_6/ptodata/1/pubpaa/US10C_PUBCOMB.pep.*
16: /cgn2_6/ptodata/1/pubpaa/US10D_PUBCOMB.pep.*
17: /cgn2_6/ptodata/1/pubpaa/US10E_PUBCOMB.pep.*
18: /cgn2_6/ptodata/1/pubpaa/US10F_PUBCOMB.pep.*
19: /cgn2_6/ptodata/1/pubpaa/US10G_PUBCOMB.pep.*
20: /cgn2_6/ptodata/1/pubpaa/US11_NEW_PUB.pep.*
21: /cgn2_6/ptodata/1/pubpaa/US60_NEW_PUB.pep.*
22: /cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	136	100.0	280	10	US-09-811-007-42
2	136	100.0	280	13	US-10-062-624-42
3	136	100.0	280	13	US-10-059-964-48
4	136	100.0	280	14	US-10-062-051-42
5	136	100.0	280	14	US-10-062-920-42
6	136	100.0	280	14	US-10-314-639-48
7	136	100.0	280	16	US-10-680-349-48
8	136	100.0	280	16	US-10-731-554-42
9	136	100.0	280	16	US-10-901-714-48
10	136	100.0	280	16	US-10-901-774-48
11	97	71.3	283	9	US-09-846-808-14

12	97	71.3	283	10	US-09-811-007-10	Sequence 10, Appl
13	97	71.3	283	13	US-10-062-624-10	Sequence 10, Appl
14	97	71.3	283	13	US-10-059-964-4	Sequence 4, Appl
15	97	71.3	283	14	US-10-062-051-10	Sequence 10, Appl
16	97	71.3	283	14	US-10-284-986-14	Sequence 14, Appl
17	97	71.3	283	14	US-10-062-920-10	Sequence 10, Appl
18	97	71.3	283	14	US-10-314-639-4	Sequence 4, Appl
19	97	71.3	283	14	US-10-369-293-14	Sequence 14, Appl
20	97	71.3	283	14	US-10-285-042-14	Sequence 14, Appl
21	97	71.3	283	16	US-10-680-349-10	Sequence 10, Appl
22	97	71.3	283	16	US-10-731-554-10	Sequence 10, Appl
23	97	71.3	283	16	US-10-901-714-4	Sequence 4, Appl
24	97	71.3	283	16	US-10-901-774-4	Sequence 4, Appl
25	54.5	40.1	70	15	US-10-424-599-158286	Sequence 158286,
26	53	39.0	361	15	US-10-424-599-204976	Sequence 204976,
27	52.5	38.6	339	15	US-10-369-493-4102	Sequence 4102, Ap
28	52	38.2	377	15	US-10-282-122A-57079	Sequence 57079, A
29	52	38.2	481	15	US-10-282-122A-48632	Sequence 48632, A
30	51	37.5	86	15	US-10-424-599-229045	Sequence 229045,
31	51	37.5	525	15	US-10-369-493-23031	Sequence 23031, A
32	50.5	37.1	873	15	US-10-369-493-11332	Sequence 11332, A
33	50	36.8	57	16	US-10-425-115-231193	Sequence 231193,
34	50	36.8	283	16	US-10-901-714-69	Sequence 69, Appl
35	50	36.8	283	16	US-10-901-774-69	Sequence 69, Appl
36	50	36.8	284	10	US-09-811-007-15	Sequence 15, Appl
37	50	36.8	284	13	US-10-062-624-15	Sequence 15, Appl
38	50	36.8	284	14	US-10-062-051-15	Sequence 15, Appl
39	50	36.8	284	14	US-10-062-920-15	Sequence 15, Appl
40	50	36.8	284	16	US-10-680-349-15	Sequence 15, Appl
41	50	36.8	284	16	US-10-731-554-15	Sequence 15, Appl
42	49.5	36.4	205	16	US-10-767-701-41494	Sequence 41494, A
43	49.5	36.4	521	10	US-09-820-843A-93	Sequence 93, Appl
44	49.5	36.4	554	14	US-10-125-692-21	Sequence 21, Appl
45	49.5	36.4	554	18	US-10-991-347-21	Sequence 21, Appl

ALIGNMENTS

RESULT 1
US-09-811-007-42
; Sequence 42, Application US/09811007
; Publication No. US20030185849A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP2
; CURRENT FILING DATE: 2001-03-16
; CURRENT APPLICATION NUMBER: US/09/811.007
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 42
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. canis p28-2 protein
US-09-811-007-42

Query Match 100.0%; Score 136; DB 10; Length 280;
Best Local Similarity 100.0%; Pred. No. 1.3e-11;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Oy 1 PINGTNSLTKKVFGFKDGDITKKDD 26
Db 61 PINGTNSLTKKVFGFKDGDITKKDD 86

RESULT 2

```
US-10-062-624-42
; Sequence 42, Application US/10062624
; Publication No. US20020115840A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-Kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP2/D1
; CURRENT APPLICATION NUMBER: US/10/062,624
; CURRENT FILING DATE: 2002-01-31
; PRIOR APPLICATION NUMBER: 09/660,587
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 42
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. canis p28-2 protein
US-10-062-624-42

Query Match      100.0%; Score 136; DB 13; Length 280;
Best Local Similarity 100.0%; Pred. No. 1.3e-11;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 PINGTSLTKKVFGLKKGDIKKDD 26
Db 61 PINGTSLTKKVFGLKKGDIKKDD 86

RESULT 3
US-10-059-964-48
; Sequence 48, Application US/10059964
; Publication No. US20020120115A1
; GENERAL INFORMATION:
; APPLICANT: Rikihisa, Yasuko
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia
; TITLE OF INVENTION: Chaffeeensis
; FILE REFERENCE: 22727/04021
; CURRENT APPLICATION NUMBER: US/10/059,964
; CURRENT FILING DATE: 2002-01-28
; EARLIER APPLICATION NUMBER: 09/314,701
; EARLIER FILING DATE: 1999-03-19
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 48
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
US-10-059-964-48

Query Match      100.0%; Score 136; DB 13; Length 280;
Best Local Similarity 100.0%; Pred. No. 1.3e-11;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 PINGTSLTKKVFGLKKGDIKKDD 26
Db 61 PINGTSLTKKVFGLKKGDIKKDD 86

RESULT 4
US-10-062-051-42
; Sequence 42, Application US/10062051
; Publication No. US20030073095A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
```

```
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/10/062,051
; CURRENT FILING DATE: 2002-01-31
; PRIOR APPLICATION NUMBER: US/09/660,587
; PRIOR FILING DATE: 2000-09-12
; PRIOR APPLICATION NUMBER: 09/261,358
; PRIOR FILING DATE: 1999-03-03
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 42
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. canis p28-2 protein
US-10-062-051-42

Query Match      100.0%; Score 136; DB 14; Length 280;
Best Local Similarity 100.0%; Pred. No. 1.3e-11;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 PINGTSLTKKVFGLKKGDIKKDD 26
Db 61 PINGTSLTKKVFGLKKGDIKKDD 86

RESULT 5
US-10-062-920-42
; Sequence 42, Application US/10062920
; Publication No. US20030096250A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/10/062,920
; CURRENT FILING DATE: 2002-01-31
; PRIOR APPLICATION NUMBER: US/09/660,587
; PRIOR FILING DATE: 2000-09-12
; PRIOR APPLICATION NUMBER: 09/261,358
; PRIOR FILING DATE: 1999-03-03
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 42
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. canis p28-2 protein
US-10-062-920-42

Query Match      100.0%; Score 136; DB 14; Length 280;
Best Local Similarity 100.0%; Pred. No. 1.3e-11;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 PINGTSLTKKVFGLKKGDIKKDD 26
Db 61 PINGTSLTKKVFGLKKGDIKKDD 86

RESULT 6
US-10-314-639-48
; Sequence 48, Application US/10314639
; Publication No. US20030103991A1
; GENERAL INFORMATION:
; APPLICANT: Rikihisa, Yasuko
; APPLICANT: Ohasi, No. US20030103991A1
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia
; TITLE OF INVENTION: Chaffeeensis
; FILE REFERENCE: 22727/04021
; CURRENT APPLICATION NUMBER: US/10/314,639
; CURRENT FILING DATE: 2002-12-09
; PRIOR APPLICATION NUMBER: US/09/314,701
```



```
; PRIOR FILING DATE: 1999-05-19
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 48
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
US-10-314-639-48

Query Match      100.0%; Score 136; DB 14; Length 280;
Best Local Similarity 100.0%; Pred. No. 1.3e-11;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy  1 PINGTNSLTKKVFGGLKKGDDITKKDD 26
Db  61 PINGTNSLTKKVFGGLKKGDDITKKDD 86

RESULT 7
US-10-680-349-42
; Sequence 42, Application US/10680349
; Publication No. US20040198951A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; TITLE OF INVENTION: Homologous 28-Kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP2/D1
; CURRENT APPLICATION NUMBER: US/10/680,349
; PRIOR FILING DATE: 2003-10-07
; PRIOR APPLICATION NUMBER: US/10/062,624
; PRIOR FILING DATE: 2002-01-31
; PRIOR APPLICATION NUMBER: 09/660,587
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 42
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. canis p28-2 protein
US-10-680-349-42

Query Match      100.0%; Score 136; DB 16; Length 280;
Best Local Similarity 100.0%; Pred. No. 1.3e-11;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy  1 PINGTNSLTKKVFGGLKKGDDITKKDD 26
Db  61 PINGTNSLTKKVFGGLKKGDDITKKDD 86

RESULT 8
US-10-731-554-42
; Sequence 42, Application US/10731554
; Publication No. US20040247616A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/10/731,554
; PRIOR FILING DATE: 2003-12-09
; PRIOR APPLICATION NUMBER: US/09/811,007
; PRIOR FILING DATE: 2001-03-16
; PRIOR APPLICATION NUMBER: 09/660,587
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 42
; LENGTH: 280
```

```
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. canis p28-2 protein
US-10-731-554-42

Query Match      100.0%; Score 136; DB 16; Length 280;
Best Local Similarity 100.0%; Pred. No. 1.3e-11;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy  1 PINGTNSLTKKVFGGLKKGDDITKKDD 26
Db  61 PINGTNSLTKKVFGGLKKGDDITKKDD 86

RESULT 9
US-10-901-714-48
; Sequence 48, Application US/10901714
; Publication No. US20040265333A1
; GENERAL INFORMATION:
; APPLICANT: OHASHI, YASUKO
; APPLICANT: RIKIHISA, NORIO
; TITLE OF INVENTION: OUTER MEMBRANE PROTEIN OF EHRLICHIA CANIS AND EHRLICHIA
; FILE REFERENCE: 22727-04109
; CURRENT APPLICATION NUMBER: US/10/901,714
; CURRENT FILING DATE: 2004-07-29
; PRIOR APPLICATION NUMBER: 09/314,701
; PRIOR FILING DATE: 1999-05-19
; PRIOR APPLICATION NUMBER: 60/100,843
; PRIOR FILING DATE: 1998-09-18
; NUMBER OF SEQ ID NOS: 69
; SOFTWARE: PatentIn Ver. 3.2
; SEQ ID NO 48
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; OTHER INFORMATION:
US-10-901-714-48

Query Match      100.0%; Score 136; DB 16; Length 280;
Best Local Similarity 100.0%; Pred. No. 1.3e-11;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy  1 PINGTNSLTKKVFGGLKKGDDITKKDD 26
Db  61 PINGTNSLTKKVFGGLKKGDDITKKDD 86

RESULT 10
US-10-901-774-48
; Sequence 48, Application US/10901774
; Publication No. US20040265334A1
; GENERAL INFORMATION:
; APPLICANT: RIKIHISA, YASUKO
; APPLICANT: OHASHI, NORIO
; TITLE OF INVENTION: OUTER MEMBRANE PROTEIN OF EHRLICHIA CANIS AND EHRLICHIA
; FILE REFERENCE: 22727-04109
; CURRENT APPLICATION NUMBER: US/10/901,774
; CURRENT FILING DATE: 2004-07-29
; PRIOR APPLICATION NUMBER: 09/314,701
; PRIOR FILING DATE: 1999-05-19
; PRIOR APPLICATION NUMBER: 60/100,843
; PRIOR FILING DATE: 1998-09-18
; NUMBER OF SEQ ID NOS: 69
; SOFTWARE: PatentIn Ver. 3.2
; SEQ ID NO 48
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; OTHER INFORMATION:
US-10-901-774-48

Query Match      100.0%; Score 136; DB 16; Length 280;
```

Best Local Similarity 100.0%; Pred. No. 1.3e-11;
Matches 26; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 PINGNSLTAKVFGKKGDIKKDD 26
Db 61 PINGNSLTAKVFGKKGDIKKDD 86

RESULT 11

US-09-846-808-14
; Sequence 14, Application US/09846808
; Patent No. US2002064531A1
; GENERAL INFORMATION:
; APPLICANT: Yu, Xu-Jie
; TITLE OF INVENTION: Ehrlichia chaffeensis 28 kDa Outer Membrane
; FILE REFERENCE: D6311
; CURRENT FILING DATE: 2001-05-01
; PRIOR APPLICATION NUMBER: 60/201,035
; PRIOR FILING DATE: 2000-05-01
; NUMBER OF SEQ ID NOS: 53
; SEQ ID NO 14
; LENGTH: 283
; TYPE: PRT
; ORGANISM: Ehrlichia chaffeensis
; FEATURE:
; OTHER INFORMATION: P28-14 Outer Membrane Protein of
; OTHER INFORMATION: Ehrlichia chaffeensis
US-09-846-808-14

Query Match 71.3%; Score 97; DB 9; Length 283;
Best Local Similarity 78.3%; Pred. No. 7.1e-06;
Matches 18; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

Qy 1 PINGNSLTAKVFGKKGDIKK 23
Db 64 PINGNSITAKVFGKKGDIKK 86

RESULT 12

US-09-811-007-10
; Sequence 10, Application US/09811007
; Publication No. US20030185849A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xu-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/09/811,007
; CURRENT FILING DATE: 2001-03-16
; PRIOR APPLICATION NUMBER: 09/660,587
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 10
; LENGTH: 283
; TYPE: PRT
; ORGANISM: Ehrlichia chaffeensis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. chaffeensis OMP-18
US-09-811-007-10

Query Match 71.3%; Score 97; DB 10; Length 283;
Best Local Similarity 78.3%; Pred. No. 7.1e-06;
Matches 18; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

Qy 1 PINGNSLTAKVFGKKGDIKK 23
Db 64 PINGNSITAKVFGKKGDIKK 86

RESULT 13

US-10-062-624-10
; Sequence 10, Application US/10062624
; Publication No. US20020115840A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xu-Jie
; TITLE OF INVENTION: Homologous 28-Kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP2/D1
; CURRENT APPLICATION NUMBER: US/10/062,624
; CURRENT FILING DATE: 2002-01-31
; PRIOR APPLICATION NUMBER: 09/660,587
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 10
; LENGTH: 283
; TYPE: PRT
; ORGANISM: Ehrlichia chaffeensis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. chaffeensis OMP-18
US-10-062-624-10

Query Match 71.3%; Score 97; DB 13; Length 283;
Best Local Similarity 78.3%; Pred. No. 7.1e-06;
Matches 18; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

Qy 1 PINGNSLTAKVFGKKGDIKK 23
Db 64 PINGNSITAKVFGKKGDIKK 86

RESULT 14

US-10-059-964-4
; Sequence 4, Application US/10059964
; Publication No. US20020120115A1
; GENERAL INFORMATION:
; APPLICANT: Rikihisa, Yasuko
; APPLICANT: Ohashi, No. US20020120115A1
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia
; FILE REFERENCE: 22727/04021
; CURRENT APPLICATION NUMBER: US/10/059,964
; CURRENT FILING DATE: 2002-01-28
; EARLIER FILING DATE: 09/314,701
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 4
; LENGTH: 283
; TYPE: PRT
; ORGANISM: Ehrlichia chaffeensis
US-10-059-964-4

Query Match 71.3%; Score 97; DB 13; Length 283;
Best Local Similarity 78.3%; Pred. No. 7.1e-06;
Matches 18; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

Qy 1 PINGNSLTAKVFGKKGDIKK 23
Db 64 PINGNSITAKVFGKKGDIKK 86

RESULT 15

US-10-062-051-10
; Sequence 10, Application US/10062051
; Publication No. US20030073095A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xu-Jie

; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; FILE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/10/062,051
; CURRENT FILING DATE: 2002-01-31
; PRIOR APPLICATION NUMBER: US/09/660,587
; PRIOR FILING DATE: 2000-09-12
; PRIOR APPLICATION NUMBER: 09/261,358
; PRIOR FILING DATE: 1999-03-03
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 10
; LENGTH: 283
; TYPE: PRT
; ORGANISM: Ehrlichia chaffeensis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. chaffeensis OMP-1B
US-10-062-051-10

Query Match 71.3%; Score 97; DB 14; Length 283;
Best Local Similarity 78.3%; Pred. No. 7.1e-06;
Matches 18; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

Oy 1 PINGTNSLTKKVFGGLKKGDTK 23
||| | : ||||| :
Db 64 PINGNTSITKKVFGGLKKGDTK 86

Search completed: August 27, 2005, 08:59:35
Job time : 19.4379 secs

This Page Blank (uspto)

GenCore version 5.1.6
Copyright (c) 1993 - 2005 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: August 27, 2005, 08:41:33 ; Search time 35.6863 Seconds
(without alignments)
585.708 Million cell updates/sec

Title: US-10-680-349-42
Perfect score: 1462
Sequence: 1 MNYKKILVRSALISLMSILP.....ASVTLDVGYFGGIGMRFTF 280

Scoring table:
Gapop 10.0 , Gapext 0.5

Searched: 513545 seqs, 74649064 residues

Total number of hits satisfying chosen parameters: 513545

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued Patents AA.*
1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep.*
2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep.*
3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep.*
4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep.*
5: /cgn2_6/ptodata/1/iaa/6CTUS_COMB.pep.*
6: /cgn2_6/ptodata/1/iaa/backfiles1.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	1462	100.0	280	3	US-09-660-587-42
2	1462	100.0	280	4	US-09-314-701-48
3	1462	100.0	280	4	US-09-811-007A-42
4	1202.5	82.3	283	3	US-09-660-587-10
5	1202.5	82.3	283	4	US-09-261-358A-10
6	1202.5	82.3	283	4	US-09-201-458-6
7	1202.5	82.3	283	4	US-09-314-701-4
8	1202.5	82.3	283	4	US-09-811-007A-10
9	644.5	44.1	281	3	US-09-660-587-9
10	644.5	44.1	281	4	US-09-261-358A-9
11	644.5	44.1	281	4	US-09-201-458-5
12	644.5	44.1	281	4	US-09-811-007A-9
13	642.5	43.9	281	4	US-09-314-701-2
14	629.5	43.1	276	3	US-08-953-326-18
15	629.5	43.1	276	4	US-09-553-662-18
16	629.5	43.1	276	4	US-10-062-994-18
17	621	42.5	288	4	US-09-314-701-32
18	620	42.4	286	3	US-08-953-326-15
19	620	42.4	286	3	US-09-660-587-12
20	620	42.4	286	4	US-09-261-358A-12
21	620	42.4	286	4	US-09-201-458-8
22	620	42.4	286	4	US-09-314-701-8
23	620	42.4	286	4	US-09-553-662-15
24	620	42.4	286	4	US-10-062-994-15
25	620	42.4	286	4	US-09-811-007A-12
26	605	41.4	280	3	US-09-660-587-14
27	605	41.4	280	4	US-09-261-358A-14

28	605	41.4	280	4	US-09-201-458-10	Sequence 10, Appl
29	605	41.4	280	4	US-09-314-701-12	Sequence 12, Appl
30	605	41.4	280	4	US-09-811-007A-14	Sequence 14, Appl
31	603	41.2	280	3	US-08-953-326-17	Sequence 17, Appl
32	603	41.2	280	4	US-09-553-662-17	Sequence 17, Appl
33	603	41.2	280	4	US-10-082-994-17	Sequence 17, Appl
34	601	41.1	280	3	US-09-660-587-6	Sequence 6, Appl
35	601	41.1	280	4	US-09-261-358A-6	Sequence 6, Appl
36	601	41.1	280	4	US-09-314-701-38	Sequence 38, Appl
37	601	41.1	280	4	US-09-811-007A-6	Sequence 6, Appl
38	588	40.2	278	3	US-09-660-587-2	Sequence 2, Appl
39	588	40.2	278	4	US-09-261-358A-2	Sequence 2, Appl
40	588	40.2	278	4	US-09-201-458-2	Sequence 2, Appl
41	588	40.2	278	4	US-09-811-007A-2	Sequence 2, Appl
42	588	40.2	307	4	US-09-314-701-36	Sequence 36, Appl
43	587	40.2	285	4	US-09-314-701-30	Sequence 30, Appl
44	583	39.9	278	3	US-08-953-326-16	Sequence 16, Appl
45	583	39.9	278	3	US-09-660-587-13	Sequence 13, Appl

ALIGNMENTS

RESULT 1
US-09-660-587-42
; Sequence 42, Application US/09660587
; Patent No. 6392023
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/09/660,587
; CURRENT FILING DATE: 2000-09-12
; PRIOR APPLICATION NUMBER: 09/261,358
; PRIOR FILING DATE: 1999-03-03
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 42
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. canis p28-2 protein
US-09-660-587-42

Query Match	100.0%;	Score 1462;	DB 3;	Length 280;
Best Local Similarity	100.0%;	Pred. No. 8.2e-151;		
Matches 280;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;
Qy	1	MNYKKILVRSALISLMSILPQSPADPVGSR	TNDNKEGFYISAKYNPSISHRKFSAEET	60
Db	1	MNYKKILVRSALISLMSILPQSPADPVGSR	TNDNKEGFYISAKYNPSISHRKFSAEET	60
Qy	61	PINGTNSLTKKVFGKKDGDITTKDDFTRV	APGIDFQNNLISFGSGISGMDGPRIELE	120
Db	61	PINGTNSLTKKVFGKKDGDITTKDDFTRV	APGIDFQNNLISFGSGISGMDGPRIELE	120
Qy	121	AAVQOFPKNTDNDTNGEYKHFALSRKDM	EDQQYVVLKNDGITFMSLWNTCYDIT	180
Db	121	AAVQOFPKNTDNDTNGEYKHFALSRKDM	EDQQYVVLKNDGITFMSLWNTCYDIT	180
Qy	181	AEGVSFVPYACAGIGADLIITFKDLNLF	KFAVQKIGISYPTTPRVSFAFIGYHGVGNK	240
Db	181	AEGVSFVPYACAGIGADLIITFKDLNLF	KFAVQKIGISYPTTPRVSFAFIGYHGVGNK	240
Qy	241	FEKIPVITPVVLNDAPQTTASVTLVDVGY	FGGIGMRFTF	280
Db	241	FEKIPVITPVVLNDAPQTTASVTLVDVGY	FGGIGMRFTF	280

RESULT 2

```

US-09-314-701-48
; Sequence 48, Application US/09314701
; Patent No. 6544517
; GENERAL INFORMATION:
; APPLICANT: Rikihisa, Yasuko
; APPLICANT: Ohasi, No. 6544517io
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia
; TITLE OF INVENTION: Chaffensis
; FILE REFERENCE: 22727/04021
; CURRENT APPLICATION NUMBER: US/09/314,701
; CURRENT FILING DATE: 1999-05-19
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 48
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
US-09-314-701-48

Query Match          100.0%; Score 1462; DB 4; Length 280;
Best Local Similarity 100.0%; Pred. No. 8.2e-151;
Matches 280; Conservative 0; Mismatches 0; Indels 0; Gaps 0

Qy 1 MNYKTLVRSALISLMSILPYQSFADPVGSRSTNKNKSGFVISAKYNPSISHFRKFSAAET 60
Db 1 MNYKTLVRSALISLMSILPYQSFADPVGSRSTNKNKSGFVISAKYNPSISHFRKFSAAET 60
Qy 61 PINGTNSLTKKVFGGLKKDGDITKKDDFTRVAPGIDFQNNLISGFGSGISGYSMDDGPRIELE 120
Db 61 PINGTNSLTKKVFGGLKKDGDITKKDDFTRVAPGIDFQNNLISGFGSGISGYSMDDGPRIELE 120
Qy 121 AAYQQENPKNTDNDTNGEYKHPALSRKDAMEDQQYVVLKNDGITFMSLMWNTCYDIT 180
Db 121 AAYQQENPKNTDNDTNGEYKHPALSRKDAMEDQQYVVLKNDGITFMSLMWNTCYDIT 180
Qy 181 AEGVSFVPVACAGIGADLITIFKDLNLKFAFQYQKIGISYPTTPEVSFAFISGYYHGVGNK 240
Db 181 AEGVSFVPVACAGIGADLITIFKDLNLKFAFQYQKIGISYPTTPEVSFAFISGYYHGVGNK 240
Qy 241 FEKIPVITPVVNDAPQTTSASVTLDDVGYFGGEIGMRFTF 280
Db 241 FEKIPVITPVVNDAPQTTSASVTLDDVGYFGGEIGMRFTF 280

RESULT 3
US-09-811-007A-42
; Sequence 42, Application US/09811007A
; Patent No. 6660269
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/09/811,007A
; CURRENT FILING DATE: 2001-10-23
; PRIOR APPLICATION NUMBER: 09/660,587
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 42
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. canis p28-2 protein
US-09-811-007A-42

Query Match          100.0%; Score 1462; DB 4; Length 280;
Best Local Similarity 100.0%; Pred. No. 8.2e-151;
Matches 280; Conservative 0; Mismatches 0; Indels 0; Gaps 0

Ov 1 MNYKTLVRSALISLMSILPYQSFADPVGSRSTNKNKSGFVISAKYNPSISHFRKFSAAET 60

```

GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP
; CURRENT APPLICATION NUMBER: US/09/261,358A
; CURRENT FILING DATE: 1999-03-03
; PRIOR APPLICATION NUMBER: 09/201,458
; PRIOR FILING DATE: 1998-11-30
; NUMBER OF SEQ ID NOS: 33
; SEQ ID NO 10
; LENGTH: 283
; TYPE: PRT
; ORGANISM: Ehrlichia chaffeensis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. chaffeensis OMP-1B
US-09-261-358A-10

Query Match 82.3%; Score 1202.5; DB 4; Length 283;
Best Local Similarity 79.5%; Pred. No. 1.6e-122;
Matches 225; Conservative 26; Mismatches 29; Indels 3; Gaps 1;

Qy 1 MNYKKILVRSALISLMSILPYQSFADPVTSDTGTINDSREGFYISVKYNPSISHFRKFS 57
Db 1 MNYKKIFVSSALISLMSILPYQSFADPVTSDTGTINDSREGFYISVKYNPSISHFRKFS 60
Qy 58 EETPINGNTSLTKKVFGLKKDGDITKKDDFTRVAPGIDFQNNLISGFGSGISYMDGPRI 117
Db 61 EEAIPNGNTSITKKVFGLKKDGDIAQSANFNRTDPALEFQNNLISGFGSGIYAMDGPRI 120
Qy 118 ELEAAVQOQFNPKNNDNDTNGEYKHFALSRKDMEDQOYVVLKNDGITFMSLMVNTCY 177
Db 61 EEAIPNGNTSITKKVFGLKKDGDIAQSANFNRTDPALEFQNNLISGFGSGIYAMDGPRI 120
Qy 178 DITAEVSVFPYACAGIGADLITIFKDLNLKFAVQKIGISYPTITPEVSAPFIGGYHGV 237
Db 181 DITAEVSVFPYACAGIGADLITIFKDLNLKFAVQKIGISYPTITPEVSAPFIGGYHGV 240
Qy 238 GNFKEKIPVITPVVLDNDAPQTTASVTLVDVGYFGGEIGMRFTF 280
Db 241 GNNFNKIPVITPVVLDNDAPQTTASVTLVDVGYFGGEIGMRFTF 283
Qy 178 DITAEVSVFPYACAGIGADLITIFKDLNLKFAVQKIGISYPTITPEVSAPFIGGYHGV 237
Db 181 DITAEVSVFPYACAGIGADLITIFKDLNLKFAVQKIGISYPTITPEVSAPFIGGYHGV 240
Qy 238 GNFKEKIPVITPVVLDNDAPQTTASVTLVDVGYFGGEIGMRFTF 280
Db 241 GNNFNKIPVITPVVLDNDAPQTTASVTLVDVGYFGGEIGMRFTF 283

Query Match 82.3%; Score 1202.5; DB 4; Length 283;
Best Local Similarity 79.5%; Pred. No. 1.6e-122;
Matches 225; Conservative 26; Mismatches 29; Indels 3; Gaps 1;

Qy 1 MNYKKILVRSALISLMSILPYQSFADPVTSDTGTINDSREGFYISVKYNPSISHFRKFS 57
Db 1 MNYKKIFVSSALISLMSILPYQSFADPVTSDTGTINDSREGFYISVKYNPSISHFRKFS 60
Qy 58 EETPINGNTSLTKKVFGLKKDGDITKKDDFTRVAPGIDFQNNLISGFGSGISYMDGPRI 117
Db 61 EEAIPNGNTSITKKVFGLKKDGDIAQSANFNRTDPALEFQNNLISGFGSGIYAMDGPRI 120
Qy 118 ELEAAVQOQFNPKNNDNDTNGEYKHFALSRKDMEDQOYVVLKNDGITFMSLMVNTCY 177
Db 61 EEAIPNGNTSITKKVFGLKKDGDIAQSANFNRTDPALEFQNNLISGFGSGIYAMDGPRI 120
Qy 178 DITAEVSVFPYACAGIGADLITIFKDLNLKFAVQKIGISYPTITPEVSAPFIGGYHGV 237
Db 181 DITAEVSVFPYACAGIGADLITIFKDLNLKFAVQKIGISYPTITPEVSAPFIGGYHGV 240
Qy 238 GNFKEKIPVITPVVLDNDAPQTTASVTLVDVGYFGGEIGMRFTF 280
Db 241 GNNFNKIPVITPVVLDNDAPQTTASVTLVDVGYFGGEIGMRFTF 283
Qy 178 DITAEVSVFPYACAGIGADLITIFKDLNLKFAVQKIGISYPTITPEVSAPFIGGYHGV 237
Db 181 DITAEVSVFPYACAGIGADLITIFKDLNLKFAVQKIGISYPTITPEVSAPFIGGYHGV 240
Qy 238 GNFKEKIPVITPVVLDNDAPQTTASVTLVDVGYFGGEIGMRFTF 280
Db 241 GNNFNKIPVITPVVLDNDAPQTTASVTLVDVGYFGGEIGMRFTF 283

Query Match 82.3%; Score 1202.5; DB 4; Length 283;
Best Local Similarity 79.5%; Pred. No. 1.6e-122;
Matches 225; Conservative 26; Mismatches 29; Indels 3; Gaps 1;

Qy 1 MNYKKILVRSALISLMSILPYQSFADPVTSDTGTINDSREGFYISVKYNPSISHFRKFS 57
Db 1 MNYKKIFVSSALISLMSILPYQSFADPVTSDTGTINDSREGFYISVKYNPSISHFRKFS 60
Qy 58 EETPINGNTSLTKKVFGLKKDGDITKKDDFTRVAPGIDFQNNLISGFGSGISYMDGPRI 117
Db 61 EEAIPNGNTSITKKVFGLKKDGDIAQSANFNRTDPALEFQNNLISGFGSGIYAMDGPRI 120
Qy 118 ELEAAVQOQFNPKNNDNDTNGEYKHFALSRKDMEDQOYVVLKNDGITFMSLMVNTCY 177
Db 61 EEAIPNGNTSITKKVFGLKKDGDIAQSANFNRTDPALEFQNNLISGFGSGIYAMDGPRI 120
Qy 178 DITAEVSVFPYACAGIGADLITIFKDLNLKFAVQKIGISYPTITPEVSAPFIGGYHGV 237
Db 181 DITAEVSVFPYACAGIGADLITIFKDLNLKFAVQKIGISYPTITPEVSAPFIGGYHGV 240
Qy 238 GNFKEKIPVITPVVLDNDAPQTTASVTLVDVGYFGGEIGMRFTF 280
Db 241 GNNFNKIPVITPVVLDNDAPQTTASVTLVDVGYFGGEIGMRFTF 283

Db 1 MNYKKIFVSSALISLMSILPYQSFADPVTSDTGTINDSREGFYISVKYNPSISHFRKFS 60
Qy 58 EETPINGNTSLTKKVFGLKKDGDITKKDDFTRVAPGIDFQNNLISGFGSGISYMDGPRI 117
Db 61 EEAIPNGNTSITKKVFGLKKDGDIAQSANFNRTDPALEFQNNLISGFGSGIYAMDGPRI 120
Qy 118 ELEAAVQOQFNPKNNDNDTNGEYKHFALSRKDMEDQOYVVLKNDGITFMSLMVNTCY 177
Db 121 ELEAAVQOQFNPKNNDNDTNGEYKHFALSRKDMEDQOYVVLKNDGITFMSLMVNTCY 180
Qy 178 DITAEVSVFPYACAGIGADLITIFKDLNLKFAVQKIGISYPTITPEVSAPFIGGYHGV 237
Db 181 DITAEVSVFPYACAGIGADLITIFKDLNLKFAVQKIGISYPTITPEVSAPFIGGYHGV 240
Qy 238 GNFKEKIPVITPVVLDNDAPQTTASVTLVDVGYFGGEIGMRFTF 280
Db 241 GNNFNKIPVITPVVLDNDAPQTTASVTLVDVGYFGGEIGMRFTF 283

RESULT 7
US-09-314-701-4
; Sequence 4, Application US/09314701
; Patent No. 6544517
; GENERAL INFORMATION:
; APPLICANT: Rikihisa, Yasuko
; APPLICANT: Chasi, No. 6544517io
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia
; TITLE OF INVENTION: Chaffeensis
; FILE REFERENCE: 22727/04021
; CURRENT APPLICATION NUMBER: US/09/314,701
; CURRENT FILING DATE: 1999-05-19
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 4
; LENGTH: 283
; TYPE: PRT
; ORGANISM: Ehrlichia chaffeensis
US-09-314-701-4

Query Match 82.3%; Score 1202.5; DB 4; Length 283;
Best Local Similarity 79.5%; Pred. No. 1.6e-122;
Matches 225; Conservative 26; Mismatches 29; Indels 3; Gaps 1;

Qy 1 MNYKKILVRSALISLMSILPYQSFADPVTSDTGTINDSREGFYISVKYNPSISHFRKFS 57
Db 1 MNYKKIFVSSALISLMSILPYQSFADPVTSDTGTINDSREGFYISVKYNPSISHFRKFS 60
Qy 58 EETPINGNTSLTKKVFGLKKDGDITKKDDFTRVAPGIDFQNNLISGFGSGISYMDGPRI 117
Db 61 EEAIPNGNTSITKKVFGLKKDGDIAQSANFNRTDPALEFQNNLISGFGSGIYAMDGPRI 120
Qy 118 ELEAAVQOQFNPKNNDNDTNGEYKHFALSRKDMEDQOYVVLKNDGITFMSLMVNTCY 177
Db 121 ELEAAVQOQFNPKNNDNDTNGEYKHFALSRKDMEDQOYVVLKNDGITFMSLMVNTCY 180
Qy 178 DITAEVSVFPYACAGIGADLITIFKDLNLKFAVQKIGISYPTITPEVSAPFIGGYHGV 237
Db 181 DITAEVSVFPYACAGIGADLITIFKDLNLKFAVQKIGISYPTITPEVSAPFIGGYHGV 240
Qy 238 GNFKEKIPVITPVVLDNDAPQTTASVTLVDVGYFGGEIGMRFTF 280
Db 241 GNNFNKIPVITPVVLDNDAPQTTASVTLVDVGYFGGEIGMRFTF 283

RESULT 8
US-09-811-007A-10
; Sequence 10, Application US/09811007A
; Patent No. 6660269
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein

; TITLE OF INVENTION: Genes of Ehrlichia canis and Uses Thereof
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/09/811,007A

; CURRENT FILING DATE: 2001-10-23
; PRIOR APPLICATION NUMBER: 09/660,587
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46

; SEQ ID NO 10
; LENGTH: 283
; TYPE: PRT
; ORGANISM: Ehrlichia chaffeensis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. chaffeensis OMP-1B
US-09-811-007A-10

Query Match 82.3%; Score 1202.5; DB 4; Length 283;
Best Local Similarity 79.5%; Pred. No. 1.1e-122;
Matches 225; Conservative 26; Mismatches 29; Indels 3; Gaps 1;

QY 1 MNKKILVRSALISLMSILPYQSFADPVGSR---TNDNKEGFVISAKYNPSISHRKFS 57
DB 1 MNKKILVRSALISLMSILPYQSFADPVGSR---TNDNKEGFVISAKYNPSISHRKFS 60
QY 58 EETPINGTNSLTKKVFLGKKDGOITTKDDFTRVAPGIDFQNNLISGFSGSGIGYMDGPRI 117
DB 61 EAPINGNTSITKKVFLGKKDGOIAQSANFNRTDPALEFQNNLISGFSGSGIGYMDGPRI 120
QY 118 ELEAAAYQOQNPKNNTDNGEYKHFALSRKDAMEQQYVVLKNDGITFMSLMVNTCY 177
DB 121 ELEAAAYQKFAKPNNDNTSGDYKYFGLSREDATADKKYVVLKNEGITFMSLMVNTCY 180
QY 178 DITAEGVSVFPYACAGIGADLITIFKDLNLKFAVQCKIGISYPTPEVSFAFIGYVHGVI 237
DB 181 DITAEGVSVFPYACAGIGADLITIFKDLNLKFAVQCKIGISYPTPEVSFAFIGYVHGVI 240
QY 238 GNKFEKIPVITPVVNLNDAPQTTASVTLDVGYFGGEIGMRFTF 280
DB 241 GNNFNKIPVITPVVLEGAPQTTASVTLDVGYFGGEIGMRFTF 283

RESULT 9
US-09-660-587-9

; Sequence 9, Application US/09660587
; Patent No. 639203

; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.

; APPLICANT: Yu, Xue-Jie

; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP2

; CURRENT APPLICATION NUMBER: US/09/660,587
; PRIOR FILING DATE: 2000-09-12

; PRIOR APPLICATION NUMBER: 09/261,358

; PRIOR FILING DATE: 1999-03-03

; NUMBER OF SEQ ID NOS: 46

; SEQ ID NO 9

; LENGTH: 281

; TYPE: PRT

; ORGANISM: Ehrlichia chaffeensis

; FEATURE:

; OTHER INFORMATION: amino acid sequence of E. chaffeensis P28

US-09-660-587-9

Query Match 44.1%; Score 644.5; DB 3; Length 281;
Best Local Similarity 48.1%; Pred. No. 1.1e-61;
Matches 140; Conservative 41; Mismatches 89; Indels 21; Gaps 6;

QY 1 MNKKILVRSALISLMSILPYQSFADPVGSR---TNDNKEGFVISAKYNPSISHRKFS 60
DB 1 MNKKILVRSALISLMSILPYQSFADPVGSR---TNDNKEGFVISAKYNPSISHRKFS 56
QY 61 PINGTNSLTKKVFLGKKDGOITTKDDFTRVAPGIDFQNNLISGFSGSGIGYMDG 114

DB 57 -----ERTTVGVFLGKQNWGSAISNSSPNDVTVSNYSFKYENNFPLGAGAGYSMDG 112
QY 115 PRIELEAAAYQOQNPKNNTDNGEYKHFALSRKDAME-----DQYVVLKNDGITFMS 170
DB 113 PRIELEVSIVETFDVKVQKQNN--YKNEAHRYCALSHNSAADMSASNNFVFLKNEGLD 170
QY 171 LMVNTCYDITAEGVSVFPYACAGIGADLITIFKDLNLKFAVQCKIGISYPTPEVSFA 230
DB 171 FMLNACYDVVGEIGPFPYICAGIGTDLVSMFATNPKISYQCKIGLSYISPEASVFI 230
QY 231 GYVHGVGNKFEKIPVITPVVNLNDAPQ--TTSASVTLDVGYFGGEIGMRFTF 280
DB 231 GHFHKVIGNEFRDIPITPTGSTLAGKGNYPVAILVDVCHFGIELGGRFAF 281

RESULT 10

US-09-261-358A-9

; Sequence 9, Application US/09261358A

; Patent No. 6403780

; GENERAL INFORMATION:

; APPLICANT: Walker, David H.

; APPLICANT: McBride, Jere W.

; APPLICANT: Yu, Xue-Jie

; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP

; CURRENT APPLICATION NUMBER: US/09/261,358A

; PRIOR FILING DATE: 1999-03-03

; PRIOR APPLICATION NUMBER: 09/201,458

; PRIOR FILING DATE: 1998-11-30

; NUMBER OF SEQ ID NOS: 33

; SEQ ID NO 9

; LENGTH: 281

; TYPE: PRT

; ORGANISM: Ehrlichia chaffeensis

; FEATURE:

; OTHER INFORMATION: amino acid sequence of E. chaffeensis P28

US-09-261-358A-9

Query Match 44.1%; Score 644.5; DB 4; Length 281;
Best Local Similarity 48.1%; Pred. No. 1.1e-61;
Matches 140; Conservative 41; Mismatches 89; Indels 21; Gaps 6;

QY 1 MNKKILVRSALISLMSILPYQSFADPVGSR---TNDNKEGFVISAKYNPSISHRKFS 60
DB 1 MNKKILVRSALISLMSILPYQSFADPVGSR---TNDNKEGFVISAKYNPSISHRKFS 56

QY 61 PINGTNSLTKKVFLGKKDGOITTKDDFTRVAPGIDFQNNLISGFSGSGIGYMDG 114
DB 57 -----ERTTVGVFLGKQNWGSAISNSSPNDVTVSNYSFKYENNFPLGAGAGYSMDG 112

QY 115 PRIELEAAAYQOQNPKNNTDNGEYKHFALSRKDAME-----DQYVVLKNDGITFMS 170
DB 113 PRIELEVSIVETFDVKVQKQNN--YKNEAHRYCALSHNSAADMSASNNFVFLKNEGLD 170

QY 171 LMVNTCYDITAEGVSVFPYACAGIGADLITIFKDLNLKFAVQCKIGISYPTPEVSFA 230
DB 171 FMLNACYDVVGEIGPFPYICAGIGTDLVSMFATNPKISYQCKIGLSYISPEASVFI 230

QY 231 GYVHGVGNKFEKIPVITPVVNLNDAPQ--TTSASVTLDVGYFGGEIGMRFTF 280
DB 231 GHFHKVIGNEFRDIPITPTGSTLAGKGNYPVAILVDVCHFGIELGGRFAF 281

RESULT 11

US-09-201-458-5

; Sequence 5, Application US/09201458A

; Patent No. 6458942

; GENERAL INFORMATION:

; APPLICANT: Walker, David H.

; APPLICANT: McBride, Jere W.

; APPLICANT: Yu, Xue-Jie

; TITLE OF INVENTION: 28-kDa Immunoreactive Protein Gene of Ehrlichia
; FILE REFERENCE: D6152
; CURRENT APPLICATION NUMBER: US/09/201,458A
; CURRENT FILING DATE: 1998-11-30
; NUMBER OF SEQ ID NOS: 21
; SEQ ID NO 5
; LENGTH: 281
; TYPE: PRT
; ORGANISM: Ehrlichia chaffeensis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. chaffeensis P28
US-09-201-458-5

Query Match 44.1%; Score 644.5; DB 4; Length 281;
Best Local Similarity 48.1%; Pred. No. 1.1e-61;
Matches 140; Conservative 41; Mismatches 89; Indels 21; Gaps 6;
Qy 1 MNYKKILVRSALISLMSILPQSFADPVGSRDNDKGFYISAKYNSISHFRKFSAEET 60
Db 1 MNYKKVFTTSALISLISLPGVSFSDPAGSGINGN---FYISGKYMPSASHFGVFSAKE- 56
Qy 61 PINGTNSLTKKVFLGKKDGD-----ITKDDDFTRVAPGIDFQNNLISGFGSGISGYSDMG 114
Db 57 -----ERNTTVGVLGKQNWGSAISNSPNDVFTVSNYSFKYENNPFLGFGAIGYSDMG 112
Qy 115 PRIEELAAQOFPNPKNTDNDTNGEYKHFALSRKDAME----DQYVVLKNDGITFMS 170
Db 113 PRIEELVSYETFDVKNQGN--YKNEAHRICALSHNSAADMSSASNNFVFLKNEGLDLS 170
Qy 171 LMVNTCYDITAEVGFVFPYACAGIGADLITIFKDLNLKFAVQKIGISYIPITPEVSAPIG 230
Db 171 FMLNACVDVVGEGIPFSPYICAGIGTDLVSMFEATNPKISYQKGLGLSYISPEASVFIG 230
Qy 231 GYHGVGNKFEKIPVITPVVNLDAPO--TTSASVTLGVFGGIGMRFTF 280
Db 231 GHFHKVIGNEFRDPTIPTGTSLAGKGNPAIVLDVCHFGIELGGRFAP 281

Query Match 44.1%; Score 644.5; DB 4; Length 281;
Best Local Similarity 48.1%; Pred. No. 1.1e-61;
Matches 140; Conservative 41; Mismatches 89; Indels 21; Gaps 6;
Qy 1 MNYKKILVRSALISLMSILPQSFADPVGSRDNDKGFYISAKYNSISHFRKFSAEET 60
Db 1 MNYKKVFTTSALISLISLPGVSFSDPAGSGINGN---FYISGKYMPSASHFGVFSAKE- 56
Qy 61 PINGTNSLTKKVFLGKKDGD-----ITKDDDFTRVAPGIDFQNNLISGFGSGISGYSDMG 114
Db 57 -----ERNTTVGVLGKQNWGSAISNSPNDVFTVSNYSFKYENNPFLGFGAIGYSDMG 112
Qy 115 PRIEELAAQOFPNPKNTDNDTNGEYKHFALSRKDAME----DQYVVLKNDGITFMS 170
Db 113 PRIEELVSYETFDVKNQGN--YKNEAHRICALSHNSAADMSSASNNFVFLKNEGLDLS 170
Qy 171 LMVNTCYDITAEVGFVFPYACAGIGADLITIFKDLNLKFAVQKIGISYIPITPEVSAPIG 230
Db 171 FMLNACVDVVGEGIPFSPYICAGIGTDLVSMFEATNPKISYQKGLGLSYISPEASVFIG 230
Qy 231 GYHGVGNKFEKIPVITPVVNLDAPO--TTSASVTLGVFGGIGMRFTF 280
Db 231 GHFHKVIGNEFRDPTIPTGTSLAGKGNPAIVLDVCHFGIELGGRFAP 281

Query Match 44.1%; Score 644.5; DB 4; Length 281;
Best Local Similarity 48.1%; Pred. No. 1.1e-61;
Matches 140; Conservative 41; Mismatches 89; Indels 21; Gaps 6;
Qy 1 MNYKKILVRSALISLMSILPQSFADPVGSRDNDKGFYISAKYNSISHFRKFSAEET 60
Db 1 MNYKKVFTTSALISLISLPGVSFSDPAGSGINGN---FYISGKYMPSASHFGVFSAKE- 56
Qy 61 PINGTNSLTKKVFLGKKDGD-----ITKDDDFTRVAPGIDFQNNLISGFGSGISGYSDMG 114
Db 57 -----ERNTTVGVLGKQNWGSAISNSPNDVFTVSNYSFKYENNPFLGFGAIGYSDMG 112
Qy 115 PRIEELAAQOFPNPKNTDNDTNGEYKHFALSRKDAME----DQYVVLKNDGITFMS 170
Db 113 PRIEELVSYETFDVKNQGN--YKNEAHRICALSHNSAADMSSASNNFVFLKNEGLDLS 170
Qy 171 LMVNTCYDITAEVGFVFPYACAGIGADLITIFKDLNLKFAVQKIGISYIPITPEVSAPIG 230
Db 171 FMLNACVDVVGEGIPFSPYICAGIGTDLVSMFEATNPKISYQKGLGLSYISPEASVFIG 230
Qy 231 GYHGVGNKFEKIPVITPVVNLDAPO--TTSASVTLGVFGGIGMRFTF 280
Db 231 GHFHKVIGNEFRDPTIPTGTSLAGKGNPAIVLDVCHFGIELGGRFAP 281

Db 57 -----ERNTTVGVLGKQNWGSAISNSPNDVFTVSNYSFKYENNPFLGFGAIGYSDMG 112
Qy 115 PRIEELAAQOFPNPKNTDNDTNGEYKHFALSRKDAME----DQYVVLKNDGITFMS 170
Db 113 PRIEELVSYETFDVKNQGN--YKNEAHRICALSHNSAADMSSASNNFVFLKNEGLDLS 170
Qy 171 LMVNTCYDITAEVGFVFPYACAGIGADLITIFKDLNLKFAVQKIGISYIPITPEVSAPIG 230
Db 171 FMLNACVDVVGEGIPFSPYICAGIGTDLVSMFEATNPKISYQKGLGLSYISPEASVFIG 230
Qy 231 GYHGVGNKFEKIPVITPVVNLDAPO--TTSASVTLGVFGGIGMRFTF 280
Db 231 GHFHKVIGNEFRDPTIPTGTSLAGKGNPAIVLDVCHFGIELGGRFAP 281

RESULT 13
US-09-314-701-2
; Sequence 2, Application US/09314701
; Patent No. 6544517
; GENERAL INFORMATION:
; APPLICANT: Rikihisa, Yasuko
; APPLICANT: Ohasi, No. 6544517io
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia
; TITLE OF INVENTION: Chaffeensis
; FILE REFERENCE: 22727/04021
; CURRENT APPLICATION NUMBER: US/09/314,701
; CURRENT FILING DATE: 1999-05-19
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 2
; LENGTH: 281
; TYPE: PRT
; ORGANISM: Ehrlichia chaffeensis
US-09-314-701-2

Query Match 43.9%; Score 642.5; DB 4; Length 281;
Best Local Similarity 47.8%; Pred. No. 1.8e-61;
Matches 139; Conservative 42; Mismatches 89; Indels 21; Gaps 6;
Qy 1 MNYKKILVRSALISLMSILPQSFADPVGSRDNDKGFYISAKYNSISHFRKFSAEET 60
Db 1 MNYKKVFTTSALISLISLPGVSFSDPAGSGINGN---FYISGKYMPSASHFGVFSAKE- 56
Qy 61 PINGTNSLTKKVFLGKKDGD-----ITKDDDFTRVAPGIDFQNNLISGFGSGISGYSDMG 114
Db 57 -----ERNTTVGVLGKQNWGSAISNSPNDVFTVSNYSFKYENNPFLGFGAIGYSDMG 112
Qy 115 PRIEELAAQOFPNPKNTDNDTNGEYKHFALSRKDAME----DQYVVLKNDGITFMS 170
Db 113 PRIEELVSYETFDVKNQGN--YKNEAHRICALSHNSAADMSSASNNFVFLKNEGLDLS 170
Qy 171 LMVNTCYDITAEVGFVFPYACAGIGADLITIFKDLNLKFAVQKIGISYIPITPEVSAPIG 230
Db 171 FMLNACVDVVGEGIPFSPYICAGIGTDLVSMFEATNPKISYQKGLGLSYISPEASVFIG 230
Qy 231 GYHGVGNKFEKIPVITPVVNLDAPO--TTSASVTLGVFGGIGMRFTF 280
Db 231 GHFHKVIGNEFRDPTIPTGTSLAGKGNPAIVLDVCHFGIELGGRFAP 281

RESULT 14
US-08-953-326-18
; Sequence 18, Application US/08953326
; Patent No. 6251872
; GENERAL INFORMATION:
; APPLICANT: Barbec, Anthony F.
; APPLICANT: Ganta, Roman R.
; APPLICANT: McGuire, Travis C.
; APPLICANT: Burridge, Michael J.
; APPLICANT: Nyika, Aceme
; APPLICANT: Rurangirwa, Fred R.
; APPLICANT: Mahan, Suman M.
; TITLE OF INVENTION: Nucleic Acid Vaccines Against Rickettsial Diseases of

```
; TITLE OF INVENTION: Animals and Humans
; FILE REFERENCE: UP-167C1
; CURRENT APPLICATION NUMBER: US/08/953,326
; PRIOR FILING DATE: 1997-10-17
; EARLIER APPLICATION NUMBER: 08/953,326
; EARLIER FILING DATE: 1997-10-17
; EARLIER APPLICATION NUMBER: 08/733,230
; EARLIER FILING DATE: 1996-10-17
; NUMBER OF SEQ ID NOS: 24
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 18
; LENGTH: 276
; TYPE: PRN
; ORGANISM: Ehrlichia chaffeensis
US-08-953-326-18

Query Match      43.1%; Score 629.5; DB 3; Length 276;
Best Local Similarity 47.9%; Pred. No. 4.5e-60;
Matches 137; Conservative 41; Mismatches 87; Indels 21; Gaps 6;

Qy 1 MNYKKILVRSALISLMSILPYQSPADPVGSRNDNKEGFYISAKYNPSISHPRKFSAEET 60
Db 1 MNYKKVFTTSALISLSSLPQVSPAGSINGN---FYISGKYWPSASHFGVFSAKE- 56
Qy 61 PINGTNSLTKKVFLKKDGD-----ITKKDDFTRVAPGIDFQNNLISGFSGISYMDG 114
Db 57 ----ERNTTGVGFLKQNWGSAISNSPNDVFTVSNYSFKYENNPFLGFAIGAIGYMDG 112
Qy 115 PRIELEAAAYQOQNPKNKTNDNDTNGEYKHFALSRKDAME-----DQYVVLKNDGITFMS 170
Db 113 PRIELEVSJETFDVKNGQNN--YKNEAHRYCALSHNSAADMSSASNNFVFLKNEGLDIS 170
Qy 171 LMWNTCYDITAEGVSFVPYACAGIGADLITIFKDLNLFKAYQKIGISYPTTPEVSAPF 230
Db 171 FMLNACYDVVGEIGPFPYICAGIGTDLVSMFEATNPKISYQKGLGLSYSPASVFIG 230
Qy 231 GYHGVIGNKFEKIPVITPVVLNDAPQ-TTASAVTLVDVYFGGEIG 275
Db 231 GHFHKVIGNEFRDPTIIPGTSTLAGKGNYPVAILDVCVHFGIEMG 276

RESULT 15
US-09-553-662-18
; Sequence 18, Application US/09553662
; Patent No. 6593147
; GENERAL INFORMATION:
; APPLICANT: Barbet, Anthony F.
; APPLICANT: Bowie, Michael V.
; APPLICANT: Burridge, Michael J.
; APPLICANT: Mahan, Suman M.
; APPLICANT: McGuire, Travis C.
; APPLICANT: Rurangirwa, Fred R.
; APPLICANT: Moreland, Annie L.
; APPLICANT: Simbi, Bigboy H.
; APPLICANT: Whitmire, William M.
; APPLICANT: Alleman, Arthur R.
; TITLE OF INVENTION: Nucleic Acid Vaccines Against Rickettsial Diseases and
; FILE REFERENCE: UP-167XC3
; CURRENT APPLICATION NUMBER: US/09/553,662
; PRIOR FILING DATE: 2000-04-21
; PRIOR APPLICATION NUMBER: 09/337,827
; PRIOR FILING DATE: 1999-06-22
; PRIOR APPLICATION NUMBER: 08/953,326
; PRIOR FILING DATE: 1997-10-17
; PRIOR APPLICATION NUMBER: 08/733,230
; PRIOR FILING DATE: 1996-10-17
; NUMBER OF SEQ ID NOS: 34
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 18
; LENGTH: 276
; TYPE: PRN
; ORGANISM: Ehrlichia chaffeensis
```

```
US-09-553-662-18

Query Match      43.1%; Score 629.5; DB 4; Length 276;
Best Local Similarity 47.9%; Pred. No. 4.5e-60;
Matches 137; Conservative 41; Mismatches 87; Indels 21; Gaps 6;

Qy 1 MNYKKILVRSALISLMSILPYQSPADPVGSRNDNKEGFYISAKYNPSISHPRKFSAEET 60
Db 1 MNYKKVFTTSALISLSSLPQVSPAGSINGN---FYISGKYWPSASHFGVFSAKE- 56
Qy 61 PINGTNSLTKKVFLKKDGD-----ITKKDDFTRVAPGIDFQNNLISGFSGISYMDG 114
Db 57 ----ERNTTGVGFLKQNWGSAISNSPNDVFTVSNYSFKYENNPFLGFAIGAIGYMDG 112
Qy 115 PRIELEAAAYQOQNPKNKTNDNDTNGEYKHFALSRKDAME-----DQYVVLKNDGITFMS 170
Db 113 PRIELEVSJETFDVKNGQNN--YKNEAHRYCALSHNSAADMSSASNNFVFLKNEGLDIS 170
Qy 171 LMWNTCYDITAEGVSFVPYACAGIGADLITIFKDLNLFKAYQKIGISYPTTPEVSAPF 230
Db 171 FMLNACYDVVGEIGPFPYICAGIGTDLVSMFEATNPKISYQKGLGLSYSPASVFIG 230
Qy 231 GYHGVIGNKFEKIPVITPVVLNDAPQ-TTASAVTLVDVYFGGEIG 275
Db 231 GHFHKVIGNEFRDPTIIPGTSTLAGKGNYPVAILDVCVHFGIEMG 276

Search completed: August 27, 2005, 08:42:20
Job time : 36.6863 secs
```

GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.

OM protein - protein search, using sw model

Run on: August 27, 2005, 08:41:37 ; Search time 199.562 Seconds
(without alignments)
554.080 Million cell updates/sec

Title: US-10-680-349-42

Perfect score: 1462

Sequence: 1 MNYKKILVRSALISILP.....ASVTLDVGVFGEGIMRFTF 280

Scoring table:

BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1767149 seqs, 39296209 residues

Total number of hits satisfying chosen parameters: 1767149

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Published Applications AA:*

1: /cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep.*
2: /cgn2_6/ptodata/1/pubpaa/PCT_NEW_PUB.pep.*
3: /cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep.*
4: /cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.pep.*
5: /cgn2_6/ptodata/1/pubpaa/US07_NEW_PUB.pep.*
6: /cgn2_6/ptodata/1/pubpaa/PCTUS_PUBCOMB.pep.*
7: /cgn2_6/ptodata/1/pubpaa/US08_NEW_PUB.pep.*
8: /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep.*
9: /cgn2_6/ptodata/1/pubpaa/US09A_PUBCOMB.pep.*
10: /cgn2_6/ptodata/1/pubpaa/US09B_PUBCOMB.pep.*
11: /cgn2_6/ptodata/1/pubpaa/US09C_PUBCOMB.pep.*
12: /cgn2_6/ptodata/1/pubpaa/US09_NEW_PUB.pep.*
13: /cgn2_6/ptodata/1/pubpaa/US10A_PUBCOMB.pep.*
14: /cgn2_6/ptodata/1/pubpaa/US10B_PUBCOMB.pep.*
15: /cgn2_6/ptodata/1/pubpaa/US10C_PUBCOMB.pep.*
16: /cgn2_6/ptodata/1/pubpaa/US10D_PUBCOMB.pep.*
17: /cgn2_6/ptodata/1/pubpaa/US10E_PUBCOMB.pep.*
18: /cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep.*
19: /cgn2_6/ptodata/1/pubpaa/US11A_PUBCOMB.pep.*
20: /cgn2_6/ptodata/1/pubpaa/US11_NEW_PUB.pep.*
21: /cgn2_6/ptodata/1/pubpaa/US60_NEW_PUB.pep.*
22: /cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	1462	100.0	280	10	US-09-811-007-42
2	1462	100.0	280	13	US-10-062-624-42
3	1462	100.0	280	13	US-10-059-964-48
4	1462	100.0	280	14	US-10-062-051-42
5	1462	100.0	280	14	US-10-062-920-48
6	1462	100.0	280	14	US-10-314-639-48
7	1462	100.0	280	16	US-10-680-349-42
8	1462	100.0	280	16	US-10-731-554-42
9	1462	100.0	280	16	US-10-901-714-48
10	1462	100.0	280	16	US-10-901-774-48
11	1202.5	82.3	283	9	US-09-846-808-14

12	1202.5	82.3	283	10	US-09-811-007-10	Sequence 10, Appl
13	1202.5	82.3	283	13	US-10-062-624-10	Sequence 10, Appl
14	1202.5	82.3	283	13	US-10-059-964-4	Sequence 4, Appl
15	1202.5	82.3	283	14	US-10-062-051-10	Sequence 10, Appl
16	1202.5	82.3	283	14	US-10-284-986-14	Sequence 10, Appl
17	1202.5	82.3	283	14	US-10-062-920-10	Sequence 10, Appl
18	1202.5	82.3	283	14	US-10-314-639-4	Sequence 4, Appl
19	1202.5	82.3	283	14	US-10-369-293-14	Sequence 14, Appl
20	1202.5	82.3	283	14	US-10-285-042-14	Sequence 14, Appl
21	1202.5	82.3	283	16	US-10-680-349-10	Sequence 10, Appl
22	1202.5	82.3	283	16	US-10-731-554-10	Sequence 10, Appl
23	1202.5	82.3	283	16	US-10-901-714-4	Sequence 4, Appl
24	1202.5	82.3	283	16	US-10-901-774-4	Sequence 4, Appl
25	644.5	44.1	281	9	US-09-846-808-19	Sequence 19, Appl
26	644.5	44.1	281	10	US-09-811-007-9	Sequence 9, Appl
27	644.5	44.1	281	13	US-10-062-624-9	Sequence 9, Appl
28	644.5	44.1	281	14	US-10-062-051-9	Sequence 9, Appl
29	644.5	44.1	281	14	US-10-284-986-19	Sequence 19, Appl
30	644.5	44.1	281	14	US-10-062-920-9	Sequence 9, Appl
31	644.5	44.1	281	14	US-10-369-293-19	Sequence 19, Appl
32	644.5	44.1	281	14	US-10-285-042-19	Sequence 19, Appl
33	644.5	44.1	281	16	US-10-680-349-9	Sequence 9, Appl
34	644.5	44.1	281	16	US-10-731-554-9	Sequence 9, Appl
35	642.5	43.9	281	13	US-10-059-964-2	Sequence 2, Appl
36	642.5	43.9	281	14	US-10-314-639-2	Sequence 2, Appl
37	642.5	43.9	281	16	US-10-901-714-2	Sequence 2, Appl
38	642.5	43.9	281	16	US-10-901-714-67	Sequence 67, Appl
39	642.5	43.9	281	16	US-10-901-774-2	Sequence 2, Appl
40	642.5	43.9	281	16	US-10-901-774-67	Sequence 67, Appl
41	629.5	43.1	276	13	US-10-062-994-18	Sequence 18, Appl
42	629.5	43.1	276	13	US-10-062-994-18	Sequence 18, Appl
43	629.5	43.1	276	16	US-10-722-077-18	Sequence 18, Appl
44	621	42.5	288	13	US-10-059-964-32	Sequence 32, Appl
45	621	42.5	288	14	US-10-314-639-32	Sequence 32, Appl

ALIGNMENTS

RESULT 1
US-09-811-007-42
; Sequence 42, Application US/09811007
; Publication No. US20030185849A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP2
; CURRENT FILING DATE: 2001-03-16
; PRIOR APPLICATION NUMBER: US/09/811.007
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 42
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. canis p28-2 protein
US-09-811-007-42

Query Match 100.0%; Score 1462; DB 10; Length 280;
Best Local Similarity 100.0%; Pred. No 9.3e-136;
Matches 280; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 MNYKKILVRSALISILPQSPADPVGSGRTNDNKEGFYISAKYNPFSISHFRKFSABET 60
Db 1 MNYKKILVRSALISILPQSPADPVGSGRTNDNKEGFYISAKYNPFSISHFRKFSABET 60
Qy 61 PINGTSLTKVFLKGGDITKDDTRVAPGIDFQNNLISGSGSIGYMDGPRLE 120

Db 61 PINGTNSLTKKVFGKKGDDITKKDDFTRVAPGIDFQNNLISGFSIGYSMDGPRIELE 120
QY 121 AAYQQFNPKNNTDNGEYKHFALSRKDAMEDQQYVVLKNDGITFMSLMWNTCYDIT 180
Db 121 AAYQQFNPKNNTDNGEYKHFALSRKDAMEDQQYVVLKNDGITFMSLMWNTCYDIT 180
QY 181 AEGVSFVPYACAGIGADLITIFKDLNLKFAVQKGIGISYPTTPEVSAPFYGYYHGVGNK 240
Db 181 AEGVSFVPYACAGIGADLITIFKDLNLKFAVQKGIGISYPTTPEVSAPFYGYYHGVGNK 240
QY 241 FEKIPVITPVVLNDAPQTTSASVTLDVGYFGGEIGMRFTF 280
Db 241 FEKIPVITPVVLNDAPQTTSASVTLDVGYFGGEIGMRFTF 280

RESULT 2
US-10-062-624-42
; Sequence 42, Application US/10062624
; Publication No. US20020115840A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-Kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP2/D1
; CURRENT APPLICATION NUMBER: US/10/062,624
; CURRENT FILING DATE: 2002-01-31
; PRIOR APPLICATION NUMBER: 09/660,587
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 42
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. canis p28-2 protein
US-10-062-624-42

Query Match 100.0%; Score 1462; DB 13; Length 280;
Best Local Similarity 100.0%; Pred. No. 9.3e-136;
Matches 280; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MNYKKILVRSALISLMSILPYQSFADPVGSRRTNDNKEGFYISAKYNPSISHFRKFSAEET 60
Db 1 MNYKKILVRSALISLMSILPYQSFADPVGSRRTNDNKEGFYISAKYNPSISHFRKFSAEET 60
QY 61 PINGTNSLTKKVFGKKGDDITKKDDFTRVAPGIDFQNNLISGFSIGYSMDGPRIELE 120
Db 61 PINGTNSLTKKVFGKKGDDITKKDDFTRVAPGIDFQNNLISGFSIGYSMDGPRIELE 120
QY 121 AAYQQFNPKNNTDNGEYKHFALSRKDAMEDQQYVVLKNDGITFMSLMWNTCYDIT 180
Db 121 AAYQQFNPKNNTDNGEYKHFALSRKDAMEDQQYVVLKNDGITFMSLMWNTCYDIT 180
QY 181 AEGVSFVPYACAGIGADLITIFKDLNLKFAVQKGIGISYPTTPEVSAPFYGYYHGVGNK 240
Db 181 AEGVSFVPYACAGIGADLITIFKDLNLKFAVQKGIGISYPTTPEVSAPFYGYYHGVGNK 240
QY 241 FEKIPVITPVVLNDAPQTTSASVTLDVGYFGGEIGMRFTF 280
Db 241 FEKIPVITPVVLNDAPQTTSASVTLDVGYFGGEIGMRFTF 280

RESULT 3
US-10-059-964-48
; Sequence 48, Application US/10059964
; Publication No. US20020120115A1
; GENERAL INFORMATION:
; APPLICANT: Rikihisa, Yasuko
; APPLICANT: Ohaei, No. US20020120115A1io
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia
; ; TITLE OF INVENTION: Chaffeensis

; FILE REFERENCE: 22727/04021
; CURRENT APPLICATION NUMBER: US/10/059,964
; EARLIER FILING DATE: 2002-01-28
; EARLIER FILING DATE: 09/314,701
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 48
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
US-10-059-964-48
Query Match 100.0%; Score 1462; DB 13; Length 280;
Best Local Similarity 100.0%; Pred. No. 9.3e-136;
Matches 280; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MNYKKILVRSALISLMSILPYQSFADPVGSRRTNDNKEGFYISAKYNPSISHFRKFSAEET 60
Db 1 MNYKKILVRSALISLMSILPYQSFADPVGSRRTNDNKEGFYISAKYNPSISHFRKFSAEET 60
QY 61 PINGTNSLTKKVFGKKGDDITKKDDFTRVAPGIDFQNNLISGFSIGYSMDGPRIELE 120
Db 61 PINGTNSLTKKVFGKKGDDITKKDDFTRVAPGIDFQNNLISGFSIGYSMDGPRIELE 120
QY 121 AAYQQFNPKNNTDNGEYKHFALSRKDAMEDQQYVVLKNDGITFMSLMWNTCYDIT 180
Db 121 AAYQQFNPKNNTDNGEYKHFALSRKDAMEDQQYVVLKNDGITFMSLMWNTCYDIT 180
QY 181 AEGVSFVPYACAGIGADLITIFKDLNLKFAVQKGIGISYPTTPEVSAPFYGYYHGVGNK 240
Db 181 AEGVSFVPYACAGIGADLITIFKDLNLKFAVQKGIGISYPTTPEVSAPFYGYYHGVGNK 240
QY 241 FEKIPVITPVVLNDAPQTTSASVTLDVGYFGGEIGMRFTF 280
Db 241 FEKIPVITPVVLNDAPQTTSASVTLDVGYFGGEIGMRFTF 280

RESULT 4
US-10-062-051-42
; Sequence 42, Application US/10062051
; Publication No. US20030073095A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/10/062,051
; CURRENT FILING DATE: 2002-01-31
; PRIOR APPLICATION NUMBER: US/09/660,587
; PRIOR FILING DATE: 2000-09-12
; PRIOR APPLICATION NUMBER: 09/261,358
; PRIOR FILING DATE: 1999-03-03
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 42
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. canis p28-2 protein
US-10-062-051-42

Query Match 100.0%; Score 1462; DB 14; Length 280;
Best Local Similarity 100.0%; Pred. No. 9.3e-136;
Matches 280; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MNYKKILVRSALISLMSILPYQSFADPVGSRRTNDNKEGFYISAKYNPSISHFRKFSAEET 60
Db 1 MNYKKILVRSALISLMSILPYQSFADPVGSRRTNDNKEGFYISAKYNPSISHFRKFSAEET 60
QY 61 PINGTNSLTKKVFGKKGDDITKKDDFTRVAPGIDFQNNLISGFSIGYSMDGPRIELE 120

Db 61 PINGTNSLTKKVFLGKKDGDITKKDDFTRVAPGIDFQNNLISGFSGISGMDGPRIELE 120
Qy 121 AAYQQFNPKNNTDNDNGEYKHFALSRKDAMEDQQYVVLKNDGITFMSLMWNTCYDIT 180
Db 121 AAYQQFNPKNNTDNDNGEYKHFALSRKDAMEDQQYVVLKNDGITFMSLMWNTCYDIT 180
Qy 181 AEGVSFVPYACAGIGADLITIFKDLNLKFAYQKGIGISYPTITPEVSFAFIGYHGVGNK 240
Db 181 AEGVSFVPYACAGIGADLITIFKDLNLKFAYQKGIGISYPTITPEVSFAFIGYHGVGNK 240
Qy 241 FEKIPVITPVVLNDAPQTTSASVTLVDVGYFGGIGMRFTF 280
Db 241 FEKIPVITPVVLNDAPQTTSASVTLVDVGYFGGIGMRFTF 280

RESULT 5
US-10-062-920-42
; Sequence 42, Application US/10062920
; Publication No. US20030096250A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/10/062,920
; PRIOR FILING DATE: 2002-01-31
; PRIOR APPLICATION NUMBER: US/09/660,587
; PRIOR FILING DATE: 2000-09-12
; PRIOR APPLICATION NUMBER: 09/261,358
; PRIOR FILING DATE: 1999-03-03
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 42
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. canis p28-2 protein
US-10-062-920-42

Query Match 100.0%; Score 1462; DB 14; Length 280;
Best Local Similarity 100.0%; Pred. No. 9.3e-136;
Matches 280; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 MNYKKILVRSALISLMSILPYQSPADPVGSRNTDNKKEGFYISAKYNPSISHFRKFSAEET 60
Db 1 MNYKKILVRSALISLMSILPYQSPADPVGSRNTDNKKEGFYISAKYNPSISHFRKFSAEET 60
Qy 61 PINGTNSLTKKVFLGKKDGDITKKDDFTRVAPGIDFQNNLISGFSGISGMDGPRIELE 120
Db 61 PINGTNSLTKKVFLGKKDGDITKKDDFTRVAPGIDFQNNLISGFSGISGMDGPRIELE 120
Qy 121 AAYQQFNPKNNTDNDNGEYKHFALSRKDAMEDQQYVVLKNDGITFMSLMWNTCYDIT 180
Db 121 AAYQQFNPKNNTDNDNGEYKHFALSRKDAMEDQQYVVLKNDGITFMSLMWNTCYDIT 180
Qy 181 AEGVSFVPYACAGIGADLITIFKDLNLKFAYQKGIGISYPTITPEVSFAFIGYHGVGNK 240
Db 181 AEGVSFVPYACAGIGADLITIFKDLNLKFAYQKGIGISYPTITPEVSFAFIGYHGVGNK 240
Qy 241 FEKIPVITPVVLNDAPQTTSASVTLVDVGYFGGIGMRFTF 280
Db 241 FEKIPVITPVVLNDAPQTTSASVTLVDVGYFGGIGMRFTF 280

RESULT 6
US-10-314-639-48
; Sequence 48, Application US/10314639
; Publication No. US20030103991A1
; GENERAL INFORMATION:
; APPLICANT: Rikihisa, Yasuko

; APPLICANT: Ohasi, No. US20030103991A1io
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia
; FILE REFERENCE: 22727/04021
; CURRENT APPLICATION NUMBER: US/10/314,639
; CURRENT FILING DATE: 2002-12-09
; PRIOR APPLICATION NUMBER: US/09/314,701
; PRIOR FILING DATE: 1999-05-19
; NUMBER OF SEQ ID NOS: 66
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 48
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; US-10-314-639-48

Query Match 100.0%; Score 1462; DB 14; Length 280;
Best Local Similarity 100.0%; Pred. No. 9.3e-136;
Matches 280; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 MNYKKILVRSALISLMSILPYQSPADPVGSRNTDNKKEGFYISAKYNPSISHFRKFSAEET 60
Db 1 MNYKKILVRSALISLMSILPYQSPADPVGSRNTDNKKEGFYISAKYNPSISHFRKFSAEET 60
Qy 61 PINGTNSLTKKVFLGKKDGDITKKDDFTRVAPGIDFQNNLISGFSGISGMDGPRIELE 120
Db 61 PINGTNSLTKKVFLGKKDGDITKKDDFTRVAPGIDFQNNLISGFSGISGMDGPRIELE 120
Qy 121 AAYQQFNPKNNTDNDNGEYKHFALSRKDAMEDQQYVVLKNDGITFMSLMWNTCYDIT 180
Db 121 AAYQQFNPKNNTDNDNGEYKHFALSRKDAMEDQQYVVLKNDGITFMSLMWNTCYDIT 180
Qy 181 AEGVSFVPYACAGIGADLITIFKDLNLKFAYQKGIGISYPTITPEVSFAFIGYHGVGNK 240
Db 181 AEGVSFVPYACAGIGADLITIFKDLNLKFAYQKGIGISYPTITPEVSFAFIGYHGVGNK 240
Qy 241 FEKIPVITPVVLNDAPQTTSASVTLVDVGYFGGIGMRFTF 280
Db 241 FEKIPVITPVVLNDAPQTTSASVTLVDVGYFGGIGMRFTF 280

RESULT 7
US-10-680-349-42
; Sequence 42, Application US/10680349
; Publication No. US20040198951A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-Kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP2/D1
; CURRENT APPLICATION NUMBER: US/10/680,349
; CURRENT FILING DATE: 2003-10-07,062,624
; PRIOR APPLICATION NUMBER: US/10/062,624
; PRIOR FILING DATE: 2002-01-31
; PRIOR APPLICATION NUMBER: 09/660,587
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 42
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. canis p28-2 protein
US-10-680-349-42

Query Match 100.0%; Score 1462; DB 16; Length 280;
Best Local Similarity 100.0%; Pred. No. 9.3e-136;
Matches 280; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 MNYKKILVRSALISLMSILPYQSPADPVGSRNTDNKKEGFYISAKYNPSISHFRKFSAEET 60

Db 1 MNYKKILVRSAISLSILPYQSFADPVGSRTRNDNKEGFYISAKYNPSISHPRKFSAAET 60
QY 61 PINGTNSLTKKVFLGKKDGDITKKDDPTRVAPGIDFQNNLISGFSGISYMDGPRIELE 120
Db 61 PINGTNSLTKKVFLGKKDGDITKKDDPTRVAPGIDFQNNLISGFSGISYMDGPRIELE 120
QY 121 AAYQQFNPKNTDNDNGEYKHFALSRKDAEDQQYVVLKNDGITFMSLMWNTCYDIT 180
Db 121 AAYQQFNPKNTDNDNGEYKHFALSRKDAEDQQYVVLKNDGITFMSLMWNTCYDIT 180
QY 181 AEGVSFVPYACAGIGADLIITFKDLNLKFAKQKIGISYPIITPEVSFAFGYVHGVI 240
Db 181 AEGVSFVPYACAGIGADLIITFKDLNLKFAKQKIGISYPIITPEVSFAFGYVHGVI 240
QY 241 FEKIPVITPVVLNDAPQTTSASVTLGVYFGGIGMRFTF 280
Db 241 FEKIPVITPVVLNDAPQTTSASVTLGVYFGGIGMRFTF 280

RESULT 8

US-10-731-554-42
; Sequence 42, Application US/10731554
; Publication No. US20040247616A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; FILE REFERENCE: D6152CIP2
; CURRENT APPLICATION NUMBER: US/10/731,554
; CURRENT FILING DATE: 2003-12-09
; PRIOR FILING DATE: 2001-03-16
; PRIOR FILING DATE: 2000-09-12
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 42
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. canis p28-2 protein
US-10-731-554-42

Query Match 100.0%; Score 1462; DB 16; Length 280;
Best Local Similarity 100.0%; Pred. No. 9.3e-136;
Matches 280; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MNYKKILVRSAISLSILPYQSFADPVGSRTRNDNKEGFYISAKYNPSISHPRKFSAAET 60
Db 1 MNYKKILVRSAISLSILPYQSFADPVGSRTRNDNKEGFYISAKYNPSISHPRKFSAAET 60
QY 61 PINGTNSLTKKVFLGKKDGDITKKDDPTRVAPGIDFQNNLISGFSGISYMDGPRIELE 120
Db 61 PINGTNSLTKKVFLGKKDGDITKKDDPTRVAPGIDFQNNLISGFSGISYMDGPRIELE 120
QY 121 AAYQQFNPKNTDNDNGEYKHFALSRKDAEDQQYVVLKNDGITFMSLMWNTCYDIT 180
Db 121 AAYQQFNPKNTDNDNGEYKHFALSRKDAEDQQYVVLKNDGITFMSLMWNTCYDIT 180
QY 181 AEGVSFVPYACAGIGADLIITFKDLNLKFAKQKIGISYPIITPEVSFAFGYVHGVI 240
Db 181 AEGVSFVPYACAGIGADLIITFKDLNLKFAKQKIGISYPIITPEVSFAFGYVHGVI 240
QY 241 FEKIPVITPVVLNDAPQTTSASVTLGVYFGGIGMRFTF 280
Db 241 FEKIPVITPVVLNDAPQTTSASVTLGVYFGGIGMRFTF 280

RESULT 9

US-10-901-714-48
; Sequence 48, Application US/10901714

; Publication No. US20040265333A1
; GENERAL INFORMATION:
; APPLICANT: RIKIHISA, YASUKO
; APPLICANT: OHASHI, NORIO
; TITLE OF INVENTION: OUTER MEMBRANE PROTEIN OF EHRLICHIA CANIS AND EHRLICHIA
; FILE REFERENCE: CHAFFEENSIS
; CURRENT APPLICATION NUMBER: US/10/901,714
; CURRENT FILING DATE: 2004-07-29
; PRIOR FILING DATE: 1999-05-19
; PRIOR FILING DATE: 1998-09-18
; NUMBER OF SEQ ID NOS: 69
; SOFTWARE: PatentIn Ver. 3.2
; SEQ ID NO 48
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
US-10-901-714-48

Query Match 100.0%; Score 1462; DB 16; Length 280;
Best Local Similarity 100.0%; Pred. No. 9.3e-136;
Matches 280; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MNYKKILVRSAISLSILPYQSFADPVGSRTRNDNKEGFYISAKYNPSISHPRKFSAAET 60
Db 1 MNYKKILVRSAISLSILPYQSFADPVGSRTRNDNKEGFYISAKYNPSISHPRKFSAAET 60
QY 61 PINGTNSLTKKVFLGKKDGDITKKDDPTRVAPGIDFQNNLISGFSGISYMDGPRIELE 120
Db 61 PINGTNSLTKKVFLGKKDGDITKKDDPTRVAPGIDFQNNLISGFSGISYMDGPRIELE 120
QY 121 AAYQQFNPKNTDNDNGEYKHFALSRKDAEDQQYVVLKNDGITFMSLMWNTCYDIT 180
Db 121 AAYQQFNPKNTDNDNGEYKHFALSRKDAEDQQYVVLKNDGITFMSLMWNTCYDIT 180
QY 181 AEGVSFVPYACAGIGADLIITFKDLNLKFAKQKIGISYPIITPEVSFAFGYVHGVI 240
Db 181 AEGVSFVPYACAGIGADLIITFKDLNLKFAKQKIGISYPIITPEVSFAFGYVHGVI 240
QY 241 FEKIPVITPVVLNDAPQTTSASVTLGVYFGGIGMRFTF 280
Db 241 FEKIPVITPVVLNDAPQTTSASVTLGVYFGGIGMRFTF 280

RESULT 10

US-10-901-774-48
; Sequence 48, Application US/10901774
; Publication No. US20040265334A1
; GENERAL INFORMATION:
; APPLICANT: RIKIHISA, YASUKO
; APPLICANT: OHASHI, NORIO
; TITLE OF INVENTION: OUTER MEMBRANE PROTEIN OF EHRLICHIA CANIS AND EHRLICHIA
; FILE REFERENCE: CHAFFEENSIS
; CURRENT APPLICATION NUMBER: US/10/901,774
; CURRENT FILING DATE: 2004-07-29
; PRIOR FILING DATE: 1999-05-19
; PRIOR FILING DATE: 1998-09-18
; NUMBER OF SEQ ID NOS: 69
; SOFTWARE: PatentIn Ver. 3.2
; SEQ ID NO 48
; LENGTH: 280
; TYPE: PRT
; ORGANISM: Ehrlichia canis
US-10-901-774-48

Query Match 100.0%; Score 1462; DB 16; Length 280;
Best Local Similarity 100.0%; Pred. No. 9.3e-136;
Matches 280; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Query Match 82.3%; Score 1202.5; DB 13; Length 283;
Best Local Similarity 79.5%; Pred. No. 4.2e-110;

Matches	225;	Conservative	26;	Mismatches	29;	Indels	3;	Gaps	1;
Qy	1	MNYKKILVR	SALISLMSILPYQSFADPVGSR---	TNDNKEGFYISAKYNPSISHF	RKFSFA	57			
Db	1	MNYKKIFVSS	SALISLMSILPYQSFADPVTSNDT	GINDSREGFYISVKYNPSISHF	RKFSFA	60			
Qy	58	EETPINGNT	SLTKKVFGLLKKDGDITTKDDFTFRVAPGIDFQNNLISG	FGSGSIGYSMDG	GPRI	117			
Db	61	EETPINGNT	SLTKKVFGLLKKDGDITTKDDFTFRVAPGIDFQNNLISG	FGSGSIGYAMD	GPRI	120			
Qy	118	ELEAAYQO	FNPKNTDNDTNGEYKGFALSRKDAMEDQQVVLKNKDGI	TFMSLWNTCY	177				
Db	121	ELEAAYQK	FDKFNPDNDTNSGDYKYKFGLSREDAIADKKVVLKNK	EGITFMSLWNTCY	180				
Qy	178	DITAEGV	SFVPYACAGIGADLITTFKDLNLKFAYQKGIGISYPT	PEVSAFIGYHG	VI	237			
Db	181	DITAEGV	PFPIYACAGVGADLINVFKDFNLKFSYQKGIGISYPT	PEVSAFIGYHG	VI	240			
Qy	238	GNNFEKIP	VIPTPVVLNDAPQTTSASVTLDDVGYFGGEIGM	RRTF	280				
Db	241	GNNFNKIP	VIPTPVVLEGAPQTTSALVTIDTGFGGEVG	RRTF	283				
RESULT 14									
US-10-059-964-4									
; Sequence 4, Application US/10059964									
; Publication No. US20020120115A1									
; GENERAL INFORMATION:									
; APPLICANT: Rikihisa, Yasuko									
; APPLICANT: Ohsai, No. US20020120115A1io									
; TITLE OF INVENTION: Outer Membrane Protein of Ehrlichia Canis and Ehrlichia									
; TITLE OF INVENTION: Chaffensis									
; FILE REFERENCE: 22727/04021									
; CURRENT APPLICATION NUMBER: US/10/059,964									
; CURRENT FILING DATE: 2002-01-28									
; EARLIER APPLICATION NUMBER: 09/314,701									
; EARLIER FILING DATE: 1999-05-19									
; NUMBER OF SEQ ID NOS: 66									
; SOFTWARE: PatentIn Ver. 2.0									
; SEQ ID NO 4									
; LENGTH: 283									
; TYPE: PRF									
; ORGANISM: Ehrlichia chaffeensis									
US-10-059-964-4									
Query Match									
Best Local Similarity 82.3%; Score 1202.5; DB 13; Length 283;									
Best Local Similarity 79.5%; Pred. No. 4.2e-110;									
Matches	225;	Conservative	26;	Mismatches	29;	Indels	3;	Gaps	1;
Qy	1	MNYKKILVR	SALISLMSILPYQSFADPVGSR---	TNDNKEGFYISAKYNPSISHF	RKFSFA	57			
Db	1	MNYKKIFVSS	SALISLMSILPYQSFADPVTSNDT	GINDSREGFYISVKYNPSISHF	RKFSFA	60			
Qy	58	EETPINGNT	SLTKKVFGLLKKDGDITTKDDFTFRVAPGIDFQNNLISG	FGSGSIGYSMDG	GPRI	117			
Db	61	EETPINGNT	SLTKKVFGLLKKDGDITTKDDFTFRVAPGIDFQNNLISG	FGSGSIGYAMD	GPRI	120			
Qy	118	ELEAAYQO	FNPKNTDNDTNGEYKGFALSRKDAMEDQQVVLKNKDGI	TFMSLWNTCY	177				
Db									

```

; Publication No. US20030073095A1
; GENERAL INFORMATION:
; APPLICANT: Walker, David H.
; APPLICANT: McBride, Jere W.
; APPLICANT: Yu, Xue-Jie
; TITLE OF INVENTION: Homologous 28-kilodalton Immunodominant Protein
; FILE REFERENCE: Genes of Ehrlichia canis and Uses thereof
; CURRENT APPLICATION NUMBER: US/10/062,051
; CURRENT FILING DATE: 2002-01-31
; PRIOR APPLICATION NUMBER: US/09/660,587
; PRIOR FILING DATE: 2000-09-12
; PRIOR APPLICATION NUMBER: 09/261,358
; PRIOR FILING DATE: 1999-03-03
; NUMBER OF SEQ ID NOS: 46
; SEQ ID NO 10
; LENGTH: 283
; TYPE: PRT
; ORGANISM: Ehrlichia chaffeensis
; FEATURE:
; OTHER INFORMATION: amino acid sequence of E. chaffeensis OMP-1B
US-10-062-051-10

Query Match      82.3%; Score 1202.5; DB 14; Length 283;
Best Local Similarity 79.5%; Pred. No. 4.2e-110;
Matches 225; Conservative 26; Mismatches 29; Indels 3; Gaps 0

QY      1 MNYKILVRSALISLMSILPYQSFADPVGSR---TNDNKEGYISAKYNPSISHPRI
Db      1 MNYKIFVSSALISLMSILPYQSFADPVSTNDGTINDSREGFYISVKYNPSISHPRI
QY      58 EETPTNGTNSLTKKVFGKKDGDITKKDQFTVAPGIDFQNNLIISGFSGSIGYSMD
Db      61 EAPINGNTSITKKVFGKKDGDIAQSNFRTDPALEFQNNLIISGFSGSIGYAMD
QY      118 ELEAAQYQFNPKNTDNDTNGEYKYHFALSRKDAMEDQYVVLKNDGITTFMSLMTV
Db      121 ELEAAQYQFNAKPNDDNTNSGDYKYVFGLSREDAIADKKYVVLKNEGITTFMSLMTV
QY      178 DITAGSVFVYACAGIGADLIITFKDNLNKFAYQKGIGISYPIPTPEVSATIGGYVY
Db      181 DITAGSVFPIYACAGVGAOLINVFKNDFNLKFSYQKGIGISYPIPTPEVSATIGGYVY
QY      238 GNFKEKIPVITPVVLNDAPQTTASVTLDVGVFGGIGMRFTF 280
Db      241 GNFNFKIPVITPVVLGAPQTTALVTIDTGVFGGEGVGRFTF 283

Search completed: August 27, 2005, 08:59:34
Job time : 199.562 secs

```